The Posthuman: *Hostis Humani Generis*?

Science Fiction Allegories/Social Narratives

by

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DECLARATION

This work has not previously been presented in any form to the university or to any other institution body whether for assessment or for other purposes. Save for any express acknowledgements, references and/or bibliographies cited in the work, I confirm that the intellectual content of the work is the result of my own efforts and of no other person.

ABSTRACT

Whether in the guise of the novel or non-print media such as film and television, fin-de-millennium science fiction has provided opportunities to envisage a posthuman stage of evolution. The academic response to this has been polarized. Certain elements have embraced the genre as integral to the sociocultural relationship between unfettered biotechnological advance and the limitation of the human flesh. Others have treated the topic as fanciful entertainment, leading them to ignore and sometimes ridicule research on the posthuman. The thesis seeks to utilise the contemporary science fiction allegory as an aid in developing a critique of the emerging posthuman discourse, facilitating the analysis of its socio-political dynamic, and questioning whether discourse advancement necessitates the rejection of the humanist metanarrative.

The thesis is divided into six chapters. The first chapter differentiates the posthuman from established biotechnological discourses, examining the discontinuities in global location, temporal engagement, and participant ideology. The second reflects on the contemporary human condition associated with man's technological ingenuity being a credible threat to his own existence. It then outlines the epochal technoscience of the posthuman and introduces the diametrically opposed standpoints of the posthuman as amelioration, or auto-extinction. The third chapter draws upon utopian visions of the future to contextualise and assist in the critical analysis of narratives advocating posthuman technoscience. The fourth chapter reverses this, by utilising dystopian imagery as an entrée into the rationale of those opposing human alteration, facilitating its critique. The fifth chapter sees the science fiction allegory as a post-foundationalist narrative, offering up a discursive mirror to the influences of providence and progress on the posthuman debate. The final chapter examines whether an a-humanist account of man's relationship with technology might help to advance the posthuman debate.

'More than any other time in history, mankind faces a crossroads. One path leads to despair and utter hopelessness. The other, to total extinction. Let us pray we have the wisdom to choose correctly. I speak, by the way, not with any sense of futility, but with a panicky conviction of the absolute meaninglessness of existence that could easily be misinterpreted as pessimism. It is not. It is merely a healthy concern for the predicament of modern man.'

Woody Allen, *Side Effects*. 1981 p.61

INTRODUCTION

The evolutionary posthuman, the species that will come after the human, an evolutionary descendant, but ontologically different, the result of embracing and manipulating the human with 'present technologies, like genetic engineering and information technology, and anticipated future ones, such as molecular nanotechnology and artificial intelligence' (Bostrom 2003a p.493), is, at present, a fiction. From what we are told by academics and social commentators the closest approximation of the posthuman is to be found in the annals of fiction, specifically in the utopian and dystopian visions of contemporary science fiction. Indeed, to separate the subject of the posthuman from science fiction is to sever a frequently esoteric subject from its main vehicle of social initiation; but beyond this, such separation might render the posthuman narrative arid to the point of meaninglessness. For it is science fiction that breathes life into the posthuman, not simply because those who write about the notion constantly utilise its fictional representations to conceptualise, instruct, provoke, and envisage; but also because it is science fiction that has the capacity to render the subject tangible. Without science fiction the posthuman becomes fantastical, an abstract associated with thought experiments, a concept so implausible that many will reject the subject out of hand.

It therefore appears advantageous, when discussing the posthuman, not only to resist the temptation to cleanse it of science fiction, but rather to embrace its

contamination. Indeed having concluded this, it seemed apt to transcend the point by actively exploiting the science fiction narrative; using it, in terms of dialogue excerpts, plot summaries, and academic commentaries, as a vehicle not only to initiate and conceptualise, but also to help elicit the ideas and conflicts surrounding the emergent posthuman debate. This information would then serve to facilitate an examination and critical analysis of the social, political, moral and practical considerations and implications of posthuman technologies; thus creating a foundation that could be used as a springboard into the heart of the posthuman debate i.e., the 'interdisciplinary approach to understanding and evaluating the opportunities for enhancing the human condition and the human organism opened up by the advancement of technology.' (Bostrom 2003a p.493)

It was hoped that the utilisation of the posthuman allegory, as an essential element of investigating the posthuman, would also enable the appropriation of the compact between the narrative form and its audience. Whether science fiction is portraying only the posthuman, or the interplay between the posthuman and the human, its audience is, at present, always human. The very nature of this relationship actively promotes participation beyond the narrative structure, for it facilitates comparison between the human and a tangible representation of the posthuman. This process in turn prompts the essential dialogue that is at the very heart of comprehending the posthuman debate. That is, the evaluation, and re-evaluation, of the ideas and assumptions that forms our understanding of "humanness"; and the challenge of articulating and accounting for the ontological

differences claimed to distinguish the human from both the non-human and the posthuman.

The utilisation of science fiction also exposes how narratives can be usurped and reinterpreted by seemingly incongruous perspectives; an example of this is how technophiles have exploited technophobic fables as inspiration and validation for technological endeavour. As O'Riordan (1981) notes of the environmental debate, the "technocentrics" argue that the most appropriate method of avoiding environmental catastrophe is not via the limiting of that deemed responsible, but rather the reverse. For it is the increasing of energy consumption, technological development, and world population, that, they believe, will stimulate the human potential and ingenuity necessary to discover technological solutions to these issues.

In addition, it also appeared advantageous to utilise the science fiction narrative as a device to compartmentalising differing posthuman standpoints. The problem here centred on the apparent unfeasibility of presenting the conflict surrounding the posthuman whilst attempting to separating the arguments advocating and opposing its development. It would certainly have been a folly to disrupt the natural dialogue between these conflicting positions, but without subdivision the key issues might have been lost under the barrage of intertwined parry and riposte. It was therefore decided to disconnect these standpoints by attributing each position three accordant pieces of science fiction, and then to utilise a montage of excerpts, summaries, and commentaries, as the basis for the contextualisation of a

number of thought experiments. These thought experiments would then serve to facilitate the exploration and critical analysis of the social, political, moral and practical considerations and implications of posthuman technologies. This process would also assist in examining whether the apparent, and sometimes unpalatable, social consequences of these thought experiments were fully represented within the posthuman debate, or whether they are, at times, glossed over with narrative oversimplification. Indeed, having performed this procedure on the two conflicting standpoints, it became apparent that if the posthuman debate was to be fully examined – beyond simple power issues, vested interests and metanarrative bias – the process would need to conducted on a third "contradictory" position; one that contained predominately a-humanist perspectives, neither for nor against posthuman technologies.

While the science fiction genre contains great format cross-over, with most of the examples used here appearing, in canonical form, as both visual and written media, the decision to utilise both styles was due to their idiosyncrasies. Visual representations of science fiction are, unsurprisingly, more popular and accessible than their written counterpart. This is usually because their consumption is far less demanding. They tend to be simplified and to the point, expurgating all that is "deemed" unnecessary, sometime at the expense of all ambiguity. Such reasons make film and television highly suitable as social initiators and conceptualisers. Celluloid, as a visually driven medium, also utilises its graphical representations to create visceral impacts, emotional responses, in the form of "yuck factors", that are designed to bypass rational examination. Such responses are useful in

exposing socially indoctrinated disgust responses to certain abstract concepts, such as the idea of human cloning, or "designer babies". This said film and television are commercial exercises that tend to pander to the sentiments of their prospective demographic. In doing so, they sometimes aspire to be little more than "mindless" entertainment. Indeed, whilst visual media science fiction can be challenging, its effrontery is usually constrained by market forces and commercial self-interest. However an audacious author can be unpalatable and polemic in a manner generally perceived as commercial suicide for film or television. In addition, the written word allows a greater scope for the uncertainties and open-endedness that visual media audiences frequently despise. As a result, representations from both visual and written media were deemed necessary to enable a full analysis of the issues surrounding the posthuman.

Chapter One of the thesis is dedicated to examining the posthuman dialogue by offering it up to other avant-garde socio-political narratives dealing with analogous species-altering technologies; specifically the Western European anti-biotechnology movements relating to the genetic modification of agriculture, and the non-human animal. It was hoped that this process would fully elucidate the aetiology behind the apparent temporal, spatial and socio-political anomalies surrounding the origins, and existence, of the posthuman debate.

Having decided to exploit the science fiction narrative to assist in exploring and exposing the limitations of the posthuman debate, it was also deemed appropriate to utilise science fiction, in Chapter Two, to assist in introducing and grounding

the potency of contemporary technoscience; thus enabling the posthuman to be positioned squarely in a framework in which technological ingenuity has become a credible threat to human existence.

The decision was then made to compartmentalise the main investigation of the posthuman debate into three central chapters, commencing with allegories compatible with the successful development of the posthuman; followed by those incompatible with such development; and then those that question the very notion of successful posthuman development. This structure was designed to allow advocates to delineate the conception, frictions, and rationale behind the posthuman, before proceeding with the contrary, and evidently reactionary, perspectives of its detractors. The contradictory standpoint was then to follow as a counterpoint to the dialogue between the first two groups; highlighting questions of coherence, continuity, and relevance, and bringing an essential, and contrasting, perspective to the subject matter. This ordering also served to facilitate a logical progression through the subject dialogue, as it allowed each subsequent phase to borrow from those ideas and arguments already asserted.

Chapter Three therefore opens with a short précis of a piece of fiction that is congruent with posthuman development, followed by a commentary on the implications of the narrative, interwoven with an examination and critical analysis of the posthuman issues that have surfaced. This latter process is conducted with input, and representation, from conflicting perspectives within posthuman academia, including pertinent contributions from social and cultural studies, the

applied sciences, and philosophy. This method is then repeated twice, each time with a new piece of posthuman friendly fiction and further commentary and analysis on the posthuman debate. The advantage of this configuration is threefold. Firstly, because it allows each subsequent phase to borrow from fictions, ideas, and arguments that had come before, and thus facilitates the progression into increasingly esoteric arguments; secondly, it continually feeds new material into the argument, thus countering stagnation; and thirdly, the adopting of a rigid structure should assist in the chapter's lucidity.

Chapters Four and Five adhere to the format of Chapter Three, although with pieces of fiction accordant with perspective's contrary, or contradictory, of successful posthuman development. An order that, as has already been stated, assists in the creation of a logical progression through the posthuman debate, and also allows each subsequent chapter to borrow from earlier fictions, ideas, and arguments.

Chapter Six considers whether the posthuman debate is being constrained by its humanist bias, and assesses whether the methodological a-humanism of Actor-Network Theory, or Heidegger's a-humanist metanarrative, can progress the posthuman dialogue by offering an alternative perspective. Having considered these approaches, a-humanism is then offered up to the accusation that, rather than a path out of modernity, it is modernity in its most extreme form. In response to this, the argument for the proposed rejection of humanism is examined, and consequently so is the case for its retention.

CHAPTER I

SPECIES ALTERING TECHNOLOGY

Science Fiction as Mainstream

Certain political events of the second-half of the twentieth-century rendered moribund any questions regarding the status of science fiction as a mainstream genre. As the first artificial satellite, *Sputnik I*, circled the earth in late 1957, the "Space Age" dawned. Less than four years later US President Kennedy responded to the Soviet dominance of space by announcing to Congress that: 'I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him safely to the earth.' (1961 p.4) This was achieved in a little over eight years. In the meantime, France, Japan, China, and the United Kingdom endeavoured to launch their own satellites into space; although it would only be France that succeeded in this prior to the Apollo 11 landing. (Braeunig 2007)

Fuelled by the Cold War, the "Space Race" catapulted science fiction into the collective imagination of the First World. Whilst the creativity and consistency of sixties television programmes such as *The Outer Limits* and *Star Trek* fed the First World's insatiable appetite for space, the film *2001: A Space Odyssey* initiated the transformation of science fiction filmmaking from "B-movie" status to big-budget

Hollywood blockbuster: 'Some would even go as far to divide science fiction filmmaking into two eras: pre-2001 and post-2001. In 1968, the French magazine *L'Express* described *2001* as "Year One in the cinema of the future".' (Silverman 2001)

As the popularity of science fiction has increased over the last forty years, so has the sophistication of both its narrative and audience, and while: 'The mode of production of the science fiction film has committed it to certain kinds of narratives, conflicts, and closures that must find a profitable commercial niche… the narratives of such massive success as *Star Wars* and *Terminator 2* are riven with internal complexities and contradictions regarding the statues of technology and the definitions of the human.' (Bukatman 1994 p.12)

With the blurring of the boundaries surrounding the human, the posthuman has become a staple of the science fiction narrative. This said its portrayal, or the interpretation of its portrayal, is less than uniform. For many, science fiction represents the posthuman as the utopian salvation of humanity, as Garreau notes:

> 'The impact of such storytelling on global culture should not be underestimated. In my travels I found it hard to find a cutting-edge [posthuman] researcher today who, when asked about the inspiration for his creations, did not reply by simply pointing to a shelf in a place of honour. There invariably sat expensively collected fables of the future that shaped his youth.' (2005 p.110)

In marked contrast, others view the cultural representation of the posthuman as distinctly dystopian, presenting technoscience as pervasive invader and corrupter of the human flesh, and the ultimate ruin of humanity. Dinello argues:

> 'Science fiction shows the transformation into the posthuman as the horrific harbinger of mad scientists, rampaging robots, killer clones, cutthroat cyborgs, human-hating androids, satanic supercomputers, flesh-eating viruses, and genetically mutated monsters, science fiction expresses a technophobic fear of losing our human identity, our freedom, our emotions, our values, and our lives to machines. Like a virus, technology autonomously insinuates itself into human life and, to ensure its survival and dominance, malignantly manipulates the minds and behaviour of humans. (2005 p.2)

Again still, others view science fiction's representation of the marriage of man and machine as ambivalent, yet another of the many possible scenarios in which the self-destructive nature of humanity eventually, and inevitably, brings about its own downfall:

> 'As a defiant gesture against invasion, postmodernism refuses to ingest the substances that block awareness of our condition. In this way it stands as an active counterpoint to our more common sedated passivity. We find a supreme irony, however, in this heightened

awareness.... If our culture is presumed doomed, why take such pains to alert us? Doing so is much like the replicant Leon Kowalski's absurdly oxymoronic admonition to bounty hunter Rick Deckard an instant before he intends to kill him by putting out his eyes in *Blade Runner*: "Wake up, time to die". Leon seems to want his enemy to be

> fully aware of his fate.' (Rushing and Frentz 1995 p.23)

But if science fiction is mainstream entertainment; the posthuman is a staple subject area for contemporary science fiction; science fiction represents such technologies as having divisive, possibly even revolutionary, social and cultural potency; and posthuman technologies, once perceived as mere science "fiction", are increasingly being confirmed as scientific "fact", then why does there appear to be a conspicuous absence, in Western Europe, of interest and open debate in the posthuman?

Some cynics may argue that this absence is testament to the inept way in which nation states have handled past debates on similar subjects, such as the use of biotechnology on agriculture and non-human animals. That is, governments and businesses are unwilling to have an open debate on a subject they believe they cannot win; a subject already awash with scepticism about vested interests and hidden agendas. As a result the general public is actively excluded from discussion by using hyper-technical and esoteric language, with future long-term issues constantly being obscured by the use of equivocation and ambiguity.

Others argue that an open debate is already redundant, for even if public opinion within a country could force a government to proceed in a more restrictive manner towards the posthuman, such a decision would be ephemeral at best. For it would only a matter of time before the overwhelming demand, and economic reward, for such technologies became so large, that non-participation would become too costly. This conclusion, being obvious from the outset, would serve to guarantee that no country would, or could, dare refuse to participate in the first place:

> 'But as part of a moral reflection on legal policy, reference to the normative force of established facts will only confirm a sceptical public's fear that science, technology and economics may create, by their systemic dynamics, *faits accomplis* which can outstrip any normative framework.... As biotechnological research is by now bound up with investors' interests as well as with the pressure for success felt by national governments, the development of genetic engineering has acquired a dynamic which threatens to steamroll the inherently slow-paced process of an ethicopolitical opinion and will formation in the public sphere.' (Habermas 2003 p.18)

Furthermore, even in the, politically inconceivable, event of a worldwide ban on posthuman technologies, any short-term success will be marred by the ever increasing competence, ingenuity and complexity of, and the ever reducing overheads, risks and opposition to, analogous technology developed and used on plants and non-human animals. Without the catastrophic failure of these

technologies, it would appear only a matter of time before opposition to their use on humans becomes increasingly ineffective, it being the case that: 'The faster knowledge strides ahead and the more sophisticated the technologies become, the more difficult it will be to set boundaries on what the biological sciences are capable of doing, but should not do.' (CAP 2000 p.29)

But no matter how cogent or lucid the arguments that accuse the multinational biotechnology lobby of wielding sufficient financial, and thus political, power that nation states are incapable of doing anything but stifle potentially negative debate; or claims that Western European governments believe the regulation of such technology is anti *laissez-faire*, contrary to world trade and at odds with the future prosperity; or even that governments believe human biotechnology is a potential utopian solution to social issues, the use of which is too important, or possibly even too complicated, to be left to the inherently irrational and emotive public arena; each argument suffers from the same flaw: the fact that the issues and opinions they raise all seem equally pertinent to non-human biotechnology. That is, they fail to account for, not only the vociferous and open debate, in Western Europe (especially in the UK, Germany and France), concerning genetically modified agriculture and non-human animals; but also the development and flourishing of a powerful anti-biotechnology lobby. In these instances there appears to be little evidence to suggest that public engagement hinged on the need for pre-emption, or that governments and political lobbyists had the power to stifle it with esoteric language and technical jargon. Indeed, these earlier debates

surely function to increase technical knowledge on the posthuman and thus enhance the possibility of participation in discussion.

The Anti-Biotechnology Movement

In the early stages of the 1960's "Green Revolution", the use of biotechnology was limited exclusively to plants, and was viewed by many in the First World as the next step in scientific progress rather than anything controversial or emotive. As a result any form of anti-biotechnology lobby was small, consisting predominately of environmentalists who worried about biodiversity, specifically the problems of containment, cross-pollination and resultant extinction of "natural" plant species. They also worried about political hegemony; that First World countries were coercing the Third World to reduce its sustenance crop output in preference for growing of genetically engineered high-yield luxury crops to be sold on the open market. This process necessitated a revolution in agricultural methods, for these plants tended to need mono-cropping and high intensity farming methods, such as the need for farm machinery and chemicals such as fertilisers and pesticides.

Unfortunately this *technological* attempt to solve Third World poverty suffered from a number of pitfalls. Unlike the relatively new "Ice-Age" soils of the First World, mono-cropping caused massive soil erosion in the Third World. New high-yield crops were more likely to fail on marginal land than the indigenous

varieties, and when they did, the failure tended to be far more comprehensive. When machinery broke there was little local knowledge, nor foreign support, to resolve problems. The partial substitution of sustenance farming for luxury farming resulted in the need to buy food, and thus fluctuations in market prices could result in the selling of luxury crops cheaply, and the buying of insufficient amounts of expensive food. However, on those occasions when money was made from luxury crops, it, all too often, coalesced with corruption, political instability, and First World greed, to contribute to a rapid influx of military equipment into an already volatile region.

In this early period, and in contrast to the environmentalist's position on biotechnology, the mainstream "liberal-left" (those to the political left of centre, who tend to be ethical humanists, support liberal representative democracy, some degree of private property rights and free markets, social welfare, economic regulation, and some public ownership) had a tendency to be disinterested in the subject and without allegiance either way. However this was soon to change as two events helped galvanise these seemingly incompatible groups.

The first came about with the birth, most notably in the UK, of the modern animal rights/welfare movement; something widely believed to have been triggered by the publication of Peter Singer's book *Animal Liberation*. This emotive attack on vivisection helped to engage a significant number of people, who had up until then been indifferent, into thinking about and reacting against the political-right's policy of instrumentalisation. Whilst the initial response may have been limited to

the arena of animal welfare, having read Singer's book, many in the liberal-left were prompted to seek out Ruth Harrison's largely overlooked 1964 book entitled *Animal Machines*. This scathing attack on industrialised animal farming methods paralleled the environmentalist's technological cynicism and served as the missing link between the ideologies of animal welfare and environmentalism.

The second event was the gradual enlargement of the biotechnological arena to include its use on non-human animals. Although not of immediate interest to the liberal-left – unlike that of the environment-left who already had a well formulated stance on the use of biotechnology – it soon became clear that animal biotechnology was to focus on the further instrumentalisation of animals rather than their welfare or therapy. In response to this the animal welfare movement incorporated an anti-biotechnology stance as part of their core values, thus bringing their position even closer to that of the environmentalists. The knock-on effect of this "meeting of minds" was an exponential increase in the size of a *united* anti-biotechnology lobby, one that was against both agricultural and animal biotechnology.

The resultant negativity against biotechnology surprised both Western European governments and the industry; for whilst they were somewhat prepared for a potential backlash against emergent animal biotechnology, they could not comprehend the shift against agricultural biotechnology, a subject that had not, until now, attracted much interest.

The mutual benefits resulting from a coalition between the liberal-left and the environmentalists went beyond a simple widening of their appeal to potential new members. While the smaller and more scholarly environmentalists gained from a massive injection of numbers and political power; the liberal-left, which was perceived as more reactionary and emotive, gained a certain level of intellectual credibility.

However many have been worried about the compatibility of these two groups. In "Animal Liberation: A Triangular Affair", Callicott argues that the animal liberation movement is paradoxically founded on humanitarianism; and that the position of the liberal-left (or the "ethical humanists") is simply to treat certain animals, usually the sentient, as pseudo-humans: worthy of greater esteem because they are similar, in some arbitrary fashion, to what is still perceived as the ontologically superior human. In fact far from challenging anthropocentrism, Callicott believes, the liberal-left's position is perpetuate its bias:

> 'But the ethical humanists would be morally outraged if irrational and inarticulate infants, for example, were used in painful or lethal medical experiments, or if severely retarded people were hunted for pleasure. Thus, the double-dealing, the hypocrisy, of ethical humanism appears to be exposed. Ethical humanism, though claiming to discriminate between worthy and unworthy ethical patients on the basis of objective criteria impartially applied, turns out after all, it seems, to be *speciesism*, a philosophically indefensible prejudice

(analogous to racial prejudice) against animals.' (Callicott 1980 pp.316-317)

Callicott concludes that although there appears to be cohesion between environmentalism and the liberal-left, there is greater standpoint compatibility between the liberal-left and the similarly anthropocentric political-right: 'moral humanism and humane moralism appear to have much more in common with one another than either have with environmental or land ethics.' (1980 p.327) Mark Sagoff re-enforces this conclusion, in his imaginatively entitled article "Animal Liberation and Environmental Ethics: Bad Marriage, Quick Divorce", by emphasising the incompatibility between the moralism of the liberal-left and the amoralism of environmentalism:

'The principle of natural selection is not obviously a humanitarian principle; the predator-prey relationship does not depend on moral empathy. Nature ruthlessly limits animal populations by doing violence to virtually every individual before it reaches maturity; these conditions respect animal equality only in the darkest sense.... An ecological system has a beauty and an authenticity that demands respect – but plainly not on humanitarian grounds.' (Sagoff 1984 pp.299-300)

Nevertheless, any uncertainties regarding the bond between the environmentalists and the liberal-left have yet to result in divorce. Indeed, the ever increasing

political power and success of this alliance meant that by the time the biotechnology industry had products approved to sell to First World consumers – the US Food and Drug Administration approved the first genetically engineered food to be sold in the United States on the 5th November 1993, this being milk and meat from dairy cattle that had been injected with the genetically engineered synthetic growth hormone bovine somatotrophine (Gaard 1994 p.202) – the European Union had already imposed a ten year moratorium on their use. The fact that an "unofficial" EU moratorium on agricultural biotechnology did not happen until 1998, illustrates how it was only when the larger and more influential liberal-left came onboard the anti-biotechnology lobby, that political change was affected.

However, if the Western European left has been so vociferous and politically successful at repudiating non-human biotechnology, why have they not simply extended this remit to include human biotechnology? Surely it would be incongruous for the political left to perceive the use of biotechnology on humans as less controversial and emotive than its use on animals or plants.

One possible explanation for the apparent absence of such a lobby may be to argue it is simply too early in the posthuman debate for the formulation of a coherent and cohesive opposition group. Though this argument seems to be contradicted, firstly, by the "proactive" nature of the animal anti-biotechnology lobby, and secondly, by the situation in the United States, where an anti-

posthuman lobby, wielding both a large following and considerable political influence, has existed for a number of years.

If this is so, then why is the predominately right-of-centre US leading the way with the creation of an anti-posthuman lobby, something that seems intuitively associated with the political left? Ironically, the answer appears to have more to do with the fact that while bioconservatism is loosely defined as including the left-leaning politics of the environment and animal welfare, the movement is overwhelmingly dominated by the religious-right.

The US Posthuman Debate

Whilst the US political right, as a whole, generally believes that nature should be conquered and dominated by man to serve his self-interest, this standpoint can be subdivided into two differing rationalisations. The religious-right grounds its belief in the superiority of man on orthodox interpretations of religious scripture; whereas the libertarian-right, which also contains a large religious contingent, grounds its anthropocentrism on either humanism or a more progressive theism. The subject of biotechnology has, in the past, caused little conflict between these differing ideological groundings, with both the religious and the libertarian right agreeing that high-yield genetically modified crops and animals were patently advantageous to the well-being of man. However the recent development of posthuman technologies appears to be fracturing this accord, with the religious-

right reversing its stance on biotechnology when performed on the human. This change is the direct response to the religious-right's belief in the sanctity of man, and their conviction these new technologies threaten to corrupt God's principal earthly creation.

The theists of the libertarian-right, on the other hand, tend to be "religious humanists", who are less literal with their interpretation of scripture; Hoertdoerfer distinguishes them from more orthodox believers:

> 'We are *homines religioses* – creatures who must have meaning. For others that meaning is inherent in the cosmos, built into the structures of being by God. The human task is to discover it. For religious humanists, meaning is not so much discovered as created out of the raw stuff of our own experience the interplay of self with others, history and nature. To us divine revelation is but human knowledge projected on a cosmic screen; the will of God is the projection of human needs on a divine backdrop.' (1998 p.101)

For religious humanists, of both libertarian-right and liberal-left, man has a role and responsibility in decision making on Earth. That is, they believe it would be most incongruous for God to bestow man with free will, intelligence, and creativity, and then expect him to spurn these abilities to affect change. This standpoint results in the intuitive rejection of the "self-imposed" impotence of more orthodox theism; suggesting there has been confusion between:

'*contentment with the unalterable*, which is indeed a Christian virtue, and *complacency in face of the alterable*, which can be a rejection of one aspect of our human responsibility and dignity. There is no biblical warrant whatsoever for complacency in the face of alterable circumstances which are recognisably bad.' (Mackay 1979 p.58)

Mackay continues by specifically associating this idea with the notion of human genetic engineering: 'There is no evidence that this is less true of the genetic balance of the human population than of other aspects of our daily activities. So far from its being arrogant for the Christian to want to eliminate genetic defects, then, it may in fact be a duty.' (1979 p.58) In doing so Mackay clearly implies that the evaluation of human biotechnology is, for the moderate Christian, neither a clear-cut issue, nor necessarily absolute either way.

This said both the secular and the religious humanists of the US libertarian-right have an economic, political, and ideological grounding in the *laissez-faire* attitude of classic liberalism. A position that, Paul believes, is now being applied to reproductive technology and thus increasing the "prospect of a eugenics revival": 'We have essentially retreated to a position associated with nineteenth-century liberalism: that there are two spheres of activity – one in which the individual possesses absolute liberty, the other in which society might legitimately interfere.' (1992 p.680) This is in essence the position of John Stuart Mill who believes there are two types of action, those with, and those without, social consequences:

> 'The only part of the conduct of any one, for which he is amenable to society, is that which concerns others. In the part which merely concerns himself, his independence is, of right, absolute. Over himself, over his own body and mind, the individual is sovereign.'
> (Mill 1859/1985 pp.10-11)

Paul rejects Mill's dichotomy between social and individual responsibility, believing it to be too simplistic for libertarian style universal application: 'Few philosophers think this distinction workable; it is difficult to identify any activities devoid of social effects.' (1992 p.681) The worry here appears to be that libertarian ideology *can* result in the condoning, by omission, of socially detrimental activities based on the erroneous assumption they are socially neutral. That is, by advancing the maxim of personal autonomy, the libertarian accommodates and thus, it can be argued, tacitly endorses the activities of those whose actions do not impact on him. However, such anti-paternalism functions not only to absolve the agent from the social obligation of participating in debates that do not directly affect him, it also manifests itself as a form of social isolationism, actively encouraging the libertarian *not* to participating in such debates. As a result, the unaffected libertarian will tend to support, *unquestioningly*, the actions of others without the perceived need for initiation, stimulation, and participation in the very debate essential to establishing its wider effects. Furthermore, libertarians are often suspicious of government participation, intervention, and/or regulation of individual activities not perceived to impinge on

others. However these opinions leave the libertarian vulnerable to misdirection by lobbyists defending activities *with* social effects. By directing debate away from social issues and misrepresenting them as a duplicitous attack on personal liberty, the lobbyist can play on the libertarian's intransigence towards social interventionism and hope to provoke his knee-jerk reaction to protect individual freedom at all costs.

Nevertheless posthuman advocate Hughes defends the popularity of classic liberalism, believing: 'In the Western democracies we have more or less accepted Mill's argument.' (2005 p.11) For Hughes, open-market libertarianism has rightly become the overriding principle used in evaluating activities that are limited to the individual's own body: 'There are few remaining laws against "victimless crimes", with the painful exception of the War on Drugs and criminalisation of sex work, and even there most democratic countries are liberalising their drug and sex work laws.' (2005 p.11)

This principle – that a person, with sufficient financial assets, should be unimpeded in the development, procurement, and/or consumption of potentially dangerous procedures, and/or substances, so long as the individual's sovereignty is retained i.e., that such behaviour does not impact on, or is forced upon, those who do not wish it – has clearly contributed to the US becoming the world leader in what is an exceptionally lucrative private sector market for non-therapeutic medical techniques. Techniques that some perceive to be dubious in necessity and social utility, such as: beautification cosmetic surgery, performance-enhancing

drugs, gender reassignment, cryonic suspension, and in vitro fertilisation. On this latter point Fernández-Armesto highlights how the First World has appropriated *the right to have children*, transforming it from a reified defence against oppressive state laws, into a reified defence against "seemingly" oppressive animal physiology. A position that is predicated on the reinterpretation of infertility, from a condition endemic within *all* mammal groupings, into a form of social repressive:

> 'Like immortality, infertility is one of the obsessions of our time.... Infertility is one of the many afflictions re-evaluated in societies becoming unused to frustration. It is a normal condition, which its victims have faced in the past but which now seem intolerable to sufferers. The right to have a family is obviously not meant to mean that everyone who wants children must have them: only that governments must not forbid them, as, in some countries, they have done by compulsory sterilisation programmes or legislation proscribing procreation.' (2005 p.157)

While some in the libertarian-right argue that the pioneering of these types of procedures has social value, others consider them little more than the product of feckless consumerism. Nevertheless, this latter group will, and do, accommodate such behaviour by omission, and, if provoked, will even fight to protect the individual's right to spend "their" money on such procedures, even if they deem them wholly unnecessary.

Thus the US appears to be the perfect environment for both the research and development of posthuman technologies, and the stimulation of a market for its products. Indeed, the infrastructure is already in place: the US being a wealthy nation, with a medical network that is proficient in redirecting expertise and resources away from the public sector; it has a proven market of moneyed consumers with a taste for self-"improvement", and a political ideology that limits interest or resistance from non-participant locals.

This is of course the environment that pioneered a market for genetically engineered crops and animals. Indeed initially in the US there appeared to be very little resistance to non-human biotechnology until Western European started repudiating them. However, with the development of posthuman technologies, the US has its own avant-garde detractors. Analogously they are reactionaries, reacting against a technology that is already emergent; research has been done, investments made, returns calculated, and a market fashioned.

The fracturing of the US political-right on the subject of the posthuman is causing such political turmoil, that a new and highly unlikely alliance has been formed, that between the powerful religious-right and the minuscule, and predominantly secular, environmentalists.

If nothing more, the addition of the environmentalists to the US anti-posthuman canopy represents, at least, an element of continuity between it and the Western

European anti-biotechnology lobby. This said, it should be noted that these environmentalists appear to be far less vociferous in their rejection of posthuman technologies than they are towards the rejection of non-human biotechnology. However this probably has more to do with their general misanthropy and ambivalence towards the prospect of man turning his technological hubris on himself.

Interestingly the religious-right/environmentalist marriage of convenience appears to mirror the pragmatism of their opponents. The libertarian-right's support for the posthuman – or probably more appropriately, their lack of repulsion at it – has made them the target of an all-encompassing posthuman lobby that appears to promote openly conflicting interests. It is pro-disability, but aims to eradicate the disabled. It encourages individualism, but endorses eugenic homogeneity. It supports redistribution of potential, but counteracts this with an open-market. It is against legal coercion, but does little to restrict social coercion. It is for the individual, but also for the social conscience. It purports to be libertarian, but also liberal. It is secular, but welcomes the religious. It is nearly everything to everyone, or is at least attempting to be. Indeed whilst claiming to be overtly libertarian, Bostrom appears to push some overtly social liberal buttons, when he declares that the posthuman lobby: 'advocates the well-being of all sentience, whether in artificial intellects, human and non-human animals (including extraterrestrial species, if there are any). Racism, sexism, speciesism, belligerent nationalism and religious intolerance are unacceptable.' (2005 p.12)

While it appears abundantly clear that capturing the affluent US consumer is a prime motivator behind much of the more outlandish research into the posthuman, such as life extension and brain expansion, this is not to imply that such research is limited to the United States. Indeed many countries, including parts of Europe, are attempting to tap into this lucrative, and potentially global, market. In addition the initial, and more mundane, techniques with posthuman potential, such as stem-cell research, gene-therapy, embryonic manipulation, and human augmentation, are being developed worldwide, as the products and by-products of normal progressive medical research. Interesting many of these new procedures have been approved and utilised in Western Europe ahead of the United States.

Western European Posthuman Apathy?

The general public's awareness and apparent acceptance, in Western Europe, of the initial stages of human biotechnology can be seen as counterintuitive; especially in light of their attitude towards non-human biotechnology. An obvious first step in attempting to explain why the US posthuman debate is not being mirrored across the Atlantic is to highlight Europe's long standing tradition of secularism. Clearly the lack of a powerful religious orthodoxy, reacting with moral abhorrence at the defilement of the human, has stripped the posthuman narrative of its emotive resonance. However it can be argued that Western Europe's tradition of leaning to the political left-of-centre (its *social* liberalism, the collaboration of state and individual, and the primacy of the social conscience)

coalesces to provoke greater social participation and a more proactive and animated populous. Western Europe is far from reliant on religion to motivate it into action on social issues.

A more cogent argument for posthuman quietism may have something to do with an inverse relationship with perceived risk. Issues of personal safety have played an important role in the anti-biotechnology narrative, reflecting the growing assumption that post-industrial societies, especially those in Western Europe, are awash with scientific and technological cynicism:

> 'Science now finds itself in a new and troubled situation. The traditional optimistic picture is problematic and compromised at every turn. The scientific system now faces a crisis of confidence, of legitimacy and ultimately of power. We can usefully distinguish two sorts of science. The "mainstream" is reductionism in style and increasingly linked to industry. By contrast, the "post-normal" approach embodies the precautionary principle. It depends on public debate and involves an essential role for the "extended peer community".' (Ravetz 2004 p.347)

Founded on the inherent fallibility of man, the anti-biotechnology debate focused its techno-cynicism on three issues. The first is that of human ingenuity and its track-record of advertently, and inadvertently, developing and using, sometimes frivolously, hazardous technologies that compromise human wellbeing. The

second is the fundament difficulty of accepting that safety issues have been effectively addressed, despite numerous assurances, when the biotechnology industry is perceived as placing economic self-interest as its overriding principle. The third is the accusation that First World legislators are, at best, increasingly impotent with regard the regulation of economically powerful multinational industries, or at worst, simply corrupt, self-serving, and morally bankrupt:

> 'there is a well-established pattern of suppression and distortion of scientific findings by high-ranking Bush administration political appointees across numerous federal agencies... a wide-ranging effort to manipulate the government's scientific advisory system to prevent the appearance of advice that might run counter to the administration's political agenda.' (Union of Concerned Scientists 2004 p.1)

This said a major issue with animal and agricultural biotechnology is the allegation that it is being forced upon the consumer without their consent. Gaard describes how, after opinion polls in the US suggested consumers where less likely to buy, admittedly cheaper, dairy products associated with utilising growth hormones; the biotechnology industry refused to label their products as distinguishable from those that did not. Indeed, not satisfied with this:

> 'Monsanto has filed a lawsuit against two dairy cooperatives which label their products rBGH-free, claiming that this declaration is unfair

slander against the company. It maintains that because laboratory tests cannot tell the difference between milk that is produced using rBGH and milk that is not, labelling does not tell consumers anything significant.' (1994 p.203)

However if posthuman technologies are not perceived as being forced upon the consumer, but simply a matter of personal choice and without penalty if unwanted, then the associated risks may be viewed with greater stoicism. This of course assumes that the perception of risk is not wholly based on the specific details of the product, process, or activity *per se*, but is also a function of the individual's perceived ability to control and choose their level of participation:

> 'There is a prima facie plausibility in assuming that individuals make a strong distinction between risks that they undertake knowingly and risks that are imposed on them. In other words, they are philosophical about damage they incur through their own fault or through choice of dangerous sports, drinks, foods.... What makes them understandably angry is damage that they feel they should have been warned against, that they might have avoided had they known, damage caused by other people, particularly people profiting from their innocence.'
>
> (Douglas and Wildavsky 1983 pp.16-17)

If this is the case, that assessments of risk are socially constructed with subjective values playing a major role; then the perception that posthuman technologies may

be the panacea for disability, underclass status, and social exclusion, might lead potential consumers to become anything *but* prudent with their assessment of its risks. As Fleising lucidly argues: 'A parent with a haemophiliac child will likely structure her/his beliefs about genetic engineering differently from others.' (1999 p.91)

Nevertheless even if there is an attenuated perception of risk associated with the consumption of posthuman technologies, there is still the expected condemnation from non-consumers; that is unless would-be parents, as the most likely consumers of early stage "therapeutic" procedures, are somehow immune from social scorn. However parents may in fact be somewhat immune from such censure. Certainly there appears some truth in the claim that the parenting narrative is sufficiently insular to be off-limits to those who have chosen to remain childless, and many non-parents dare not make denigrating comments regarding parenting decisions lest they are vilified for incongruous self-righteousness. In addition, non-consumers who are already parents will tend not to denigrate potential consumers as they are already intimately aware of the social coercion surrounding parenting. That is, First World parents are not only expected to desire nothing but the best for their child, it is demanded of them; and this is clearly what society deems best for the child, with individual parents having little say on the matter. Indeed, whilst would-be parents have, in the past, usually managed to sidestep the blame for congenital illness and transmitting hereditary disabilities, it is becoming increasingly evident this is no longer true. Progressive medical research apparently increases parental accountability. Pregnant women

are increasingly viewed with derision if they dare to smoke, consume alcohol, eat raw seafood and unpasteurised cheese, and fail to take the recommended supplement of folic acid. Interestingly, there appears to be little tolerance for a libertarian lifestyle when pregnant, even in the United States. However this escalating accountability is gradually surpassing simple lifestyle choices and is encroaching on areas including hereditary illnesses. Now parental genetics is playing an increasing role in determining the "fitness" of would-be parents. Both the medical profession and the society at large, are finding it increasingly difficult to accommodate the idea that parents might not want to utilise the latest medical treatment to help ensure the wellbeing of their progeny. Indeed attempting to have a child, without such technology, when there is a high risk of debilitating disability transmission, is increasingly viewed as reckless and selfish.

These discussions are, however, on the periphery of the real issue at hand, i.e., why certain elements of the liberal-left vociferously reject the application of species-altering technology to animals but not to humans. As already mentioned, the current Western European anti-biotechnology debate is divided predominantly down traditional political ideologies, with the right generally advocating its use, and the left tending to reject it. This said the political left's overwhelming repudiation of non-human biotechnology appears to be the result of a marriage between two distinctive ideological standpoints. On one side there are the environmentalists whose priorities centre on the respect, protection and stewardship of nature; something they generally believe can only be achieved by rejecting anthropocentrism and re-establishing a more ecological equilibrium

between man and the environment. On the other side is the much larger and more powerful liberal-left, who find abhorrent the instrumentalisation of nature, predominately in relation to the sentient animal, and the industrialised methods being applied to it. They believe this perceived injustice can be resolved by placing a less speciesist interpretation of the categorical imperative at the centre of utilitarian ethics and natural rights. The result of such differing core values has been that while the environmentalists have strived toward the rejection of anthropocentric technoscience as unecological, the liberal-left has increased their humanist perspectives to include the protection of pseudo-humans.

The success of this coalition has rested on the illusion that they share the same goal; but in reality while the environmentalists want to protect nature from anthropocentrism, the liberal-left simply want to continue their tradition of saving humans from oppression. The fact that many in the liberal-left have started to assert that certain animals are sufficiently human in nature to deserve emancipation from commodification, instrumentalisation and oppression in an analogous fashion to humans; or that Third World humans, the First World socially underprivileged, and even the wider First World decadency, need protecting against forced consumption (via government hegemony, social coercion, and economic pandering) of species-altered foodstuffs that may have safety issues; should not be mistaken for a desire to protect the environment from man. Indeed it seems difficult to imagine the liberal-left continuing its support for the anti-biotechnology lobby, if it became apparent that species alteration served the social good.

To this end, the biotechnology industry has repeatedly attempted to utilise the rhetoric of feeding the world's starving to promote their products. Their lack of success, in convincing Western Europeans at least, is the result of a world-weary incredulity towards philanthropy, which still retains the historical legacy of those attempting to buy their way into heaven. As Moe succinctly argues:

> 'Religion is the mother of philanthropy.... In short, gifts to charity were given as the price of salvation, to make peace with heaven. And, let there be no doubt about it, salvation at a price is the theme of practically all medieval wills and conveyances to what were then called pious uses and later came to be charity in a more modern sense.' (1961 p.141)

This cynicism, verging on misanthropy, towards professed benevolence manifests itself as a search to uncover self-severing hidden agendas. In a scathing attack on First World exploitation, Gaard accuses the biotechnology industry of disingenuously claiming their products, such as Bovine Somatotropin, the growth hormone injected into dairy cows to make them hyperlactate, could help feed the world's poor:

> 'Many people worldwide cannot, in fact, digest cows' milk because of lactose intolerance. Moreover, the steady aggregate surplus of milk and butter for the past decade has not increased its availability to the

poor. Such facts indicate that physical scarcity of milk is not a factor in world hunger. The use of rBGH may even increase such hunger and the structures supporting it. Excessive animal consumption, as is predominant in many Western diets, is already a "protein factory in reverse". A single acre can feed 20 times as many people on a vegetarian diet than it can feed people eating an animal-based diet. In the US, animals are fed over 80 per cent of the corn grown in the country, and over 95 per cent of the oats. This practice of feeding livestock rather than people means that less food is available for people. Already many developing countries are growing cash crops, rather than subsistence crops, leading to shortages of domestic food.' (1994 p.203)

Nevertheless, it would appear that if there were a credible intention to utilise modified crops and farm animals, in a non-profit/non-hegemonic approach to help alleviate Third World starvation, then the liberal-left, as humanists, would not object. This is of course in marked contrast to environmentalists who tend to be more ecological/Malthusian on the subject, believing that the wholesale feeding of the world's starving is an example of knee-jerk humanitarian short-termism. For it serves more than simply to decrease mortality, it also serves to increase birth rates. This amplifies mass starvation potential, which in turn can only be averted by even more aid relief, a circular process that will paradoxically drive, rather than halt, global starvation:

'The power of population is so superior to the power in the earth to produce subsistence for man, that premature death must in some shape or other visit the human race. The vices of mankind are active and able ministers of depopulation. They are the precursors in the great army of destruction, and often finish the dreadful work themselves. But should they fail in this war of extermination, sickly seasons, epidemics, pestilence, and plague advance in terrific array, and sweep off their thousands and ten thousands. Should success be still incomplete, gigantic inevitable famine stalks in the rear, and with mighty blow, levels the population with the food of the world.' (Malthus 1798/1999 p.61)

A more fatuous example of the wafer-thin association between the liberal-left and the anti-biotechnology movement would be the liberal-left's rush to embrace biotechnology if it increased animal welfare in a non-instrumental sense. Clearly the liberal-left despise the idea of using biotechnology to produce featherless poultry, even if it can be argued that when 'held in hot climate zones, they suffer less from heat stress, show lower mortality rates and a better health status'. (Sluis 2007) Such welfare rhetoric will again be attacked as disingenuous, citing economics as the prime motivating force: 'No feathers, no waste, less processing costs and less water use during processing. Even more interesting is that these birds do not waste costly nutrients for developing useless feathers. In addition these birds show a higher meat yield and better meat quality (higher water holding capacity and colour).' (Sluis 2007) This said, what is despised here is the

instrumentalism, not the biotechnology. The animal welfare lobby repudiates, with identical vigour, the fact that featherless poultry can be produced via selective breeding rather than genetic manipulation. Indeed if biotechnology were used, say on domesticated pets, to halt, for example, the increasing proliferation of hereditary diseases such as hip dysplasia and progressive retinal atrophy, then this would side-step the issue of instrumentalism sufficiently to be, ironically, embraced by the liberal-left.

Realpolitik: Unlikely Bedfellows

Ultimately, and somewhat paradoxically, the liberal-left's distain for non-human biotechnology appears to be contingent not on the technology itself, but rather how it is utilised. That is, they perceive its use as either an unethical instrumentalisation of nature, or a form of state sponsored commercial tyranny i.e., forcing goods of questionable value and safety on unwilling citizens. Whilst the former violates the liberal-left's more inclusive categorical imperative, the latter contravenes their sensibilities on power relationships. However if this mindset is "consistently" applied to human biotechnology, then it may undermine the liberal-left's current anti-biotechnology standpoint. For while it appears obvious, when a "dairy cow" (which by the very nature of its nomenclature demonstrates its instrumentalisation) is injected with growth hormones to make it hyperlactate, it is being used as merely a means to an end; when biotechnology is applied, at the behest of the prospective parents, in an attempt to eradicate a potentially debilitating hereditary

disease, the calculation of whether this is an example of instrumentalisation appears less obvious. The counterintuitive upshot of this is that when biotechnology is applied to the human, the liberal-left might not only fail to bestow the human with additional protection, beyond that deemed necessary for crops and animals, they may paradoxically advocate less restriction.

This said the liberal-left's current passivity towards human biotechnology and the posthuman should not be seen as their last word on the subject. For the liberal-left's ethical calculations tend to be utilitarian in nature; that is, they focus not on acts themselves, which are deemed neither necessarily acceptable nor unacceptable *per se*, but rather on the motivating utility behind such acts.

At present, the "therapeutic" nature of early posthuman technology lends itself to support from the liberal-left who are, in most part, social humanists i.e., have an overriding desire to alleviate human suffering and increase human happiness. This is again in stark contrast to the opinions of many environmentalists, who argue:

> 'Pain and pleasure seem to have nothing at all to do with good and evil if our appraisal is taken from the vantage point of ecological biology. Pain in particular is primarily information. In animals, it informs the central nervous system of stress, irritation, or trauma in outlying regions of the organism.' (Callicott 1980 p.332)

However as human biotechnology becomes more available and treatments are perceived less as cases of emergency or critical care, then the subject might become less prosaic. Indeed, the capricious sensibilities of the liberal-left make soliciting approval a difficult and dangerous task, equally likely to undermine rather than advance the cause.

The liberal-left is primarily hypersensitive to issues regarding power relations and oppression, and advocates equality and social inclusion. Unlike the US libertarian, the Western European liberal is moralistically paternal and does not hold the freedom of the individual as sacred. If human biotechnology is left to the free-market, it may be viewed, by the liberal-left, as economic oppression, increasing inequality by allowing those with least need, to gain an unfair advantage over those with most need. At this point the liberal-left will have little compunction in demanding regulation to curtail the moneyed's ability to buy, what may be seen as, preferential treatment.

This said, if human biotechnology is regulated on an equal access basis, the liberal-left may see this as leading to social oppression; a slippery-slope inevitably resulting in socially coercive "liberal" eugenics (or "libertarian" eugenics from a contemporary Western European perceptive). The resultant homogenisation of the human may repulse the sentiments of the liberal-left – who tend to be passionate defenders of racial, social and cultural diversity – motivating them to ban access to technologies that undermine social heterogeneity.

Then again if human biotechnology was universally withheld, then the liberal-left might perceive this as hereditary oppression, especially if the nature/nurture argument were to swing substantially in the favour of nature. Indeed if it were concluded that social exclusion had a biological element that the social welfare system could not reverse, the liberal-left might demand such technologies be made available to those who "need" assistance.

However if human biotechnology was administered "voluntarily" to those believed of greatest need, then the liberal-left might view this as state oppression, authoritarian eugenics via medical hegemony. Worried about the potential for corruption, i.e., from the ideal of "helping the needy", to the maxim of eradicating the "unwanted" – the liberal-left might repudiate all state intervention, resulting in a *de facto* free market.

Of course these do not exhaust the multitude of possible and seemingly contradictory scenarios the liberal-left may take on therapeutic human biotechnology, the initial step towards the posthuman.

The US Debate: Why Now?

While it appears that the public, in Western European, has neither a definitive position on the posthuman, nor a particular passion for vociferously debating the ramifications of posthuman technologies, it would be disingenuous to suggest

they are not engaged or aware of the developing technoscience. Indeed the quietism surrounding Western European human biotechnology may be somewhat illusory. Not an illusion to the extent that human biotechnology is perceived as important as the non-human variety, but rather that the Western European engagement is dwarfed, and thus hidden, by the US reaction. If this were so, then it would appear rather ironic. For Western Europe's reaction, in the early 1990's, to non-human biotechnology was so animated, in comparison to the US response, that it was easy to assume there was simply no US response.

This said it should be remembered that the initial response to biotechnology, in Western European, was with regard its application, rather than its development. Indeed if animal biotechnology had been used *primarily* to increase animal welfare, rather than facilitate instrumentalisation, there may have been a very different response to it.

Conversely, sections of the US public appear to have become immersed in a debate where their opinions are not contingent on the application of the technology. Unlike the anti-biotechnology movement, both sides of the US posthuman debate appear to hold absolutist standpoints based on projected outcomes rather than present actualities.

However, hard-line decision making based on distant future predictions runs counter to both the realities of human life and the creation of social policy. As Bostrom and Ord argue:

'radical uncertainty about prediction and evaluation... is part and parcel of the human condition. It arises in practically every important deliberation, in individual decision making as well as social policy. When we decide to marry or to back some major social reform, we are not – or at least we shouldn't be – under any illusion that there exists some scientifically rigorous method of determining the odds that the long-term consequences of our decision will be a net good.' (2006 p.657)

In addition, the arguments made by both parties, in the US debate, appear to show little new insight by projecting into the distant future. If anything the debate is hankered and mundane, an elaborate regurgitation and reapplication of what it is to be human, and what is considered the good life. Indeed, the debate appears sufficiently outmoded to question why such social engagement and vociferous debate has recently surfaced.

A possible explanation may be found in the opening paragraph of the executive summary of the President's Council on Bioethics inquiry on human cloning:

'For the past five years, the prospect of human cloning has been the subject of considerable public attention and sharp moral debate, both in the United States and around the world. Since the announcement in February 1997 of the first successful cloning of a mammal (Dolly the

sheep), several other species of mammals have been clones. Although a cloned human child has yet to be born, and although the animal experiments have had low rates of success, the production of functioning mammalian cloned offspring suggests that the eventual cloning of humans must be considered a serious possibility.' (Kass 2002 p.xxxix)

On first reading this appears to be an acceptable statement: there was a high level of worldwide media coverage surrounding Dolly's arrival, and drawing attention to the technology surrounding her conception naturally sparked public interest. However, having paused for thought, it appears possible that Dolly, the potentially apocalyptic event, was little more than misdirection and media hyperbole.

Certainly there appears to be much confusion surrounding the date of the first successful cloning of a mammal, something that is reflected in the loose language used by Kass. Dolly was *not* "the first successful cloning of a mammal"; she was rather the first mammal to have been successfully 'cloned from adult cells'. (Campbell 2004 p.4) Indeed scientists have been cloning animals, including mammals, from embryonic cells for many decades. Briggs and King (1952) were the first to clone an animal successfully, this being a tadpole, more than half a century ago.

In addition there has been a protracted, and open, procession, over the last fifty years, of biotechnology's continuing achievements. Admittedly the initial focus

was on the genetic manipulation of plants and then its progression into the arena of non-human animals; but it was evident that these were mere stopgaps on the way towards human biotechnology. Humans may be on the cusp of successful, and wide-ranging, biotechnological self-manipulation, but surely this eventuality is neither a surprise, nor something that has been in any substantive doubt since Hans Spemann's first successful nuclear transfer experiment (on a two-celled salamander embryo) in 1924. (Tagarelli *et al*. p.30) If anything, humans have probably had extra time to come to terms with the idea of posthuman technologies, as their development was impeded substantially by revelations relating to the Nazi eugenic abuses of the Second World War.

The Posthuman as Millennial Endism

'As history has demonstrated... no end-of-the-century fails to assert itself as a time of crisis, as a moment of passage.... This fast-approaching end-of-the-century of ours is obviously no different. Already it is permeated with apocalyptic and eschatological sentiments, and these oblige scholars of utopia... to investigate the inextricable link between utopia and millenarianism; that is, the link between what emerges as a rational and secular type of future planning, and what is a purely religious belief in the supreme instant of mankind's redemption and rebirth.' (Fortunati 1993 p.81)

In his examination of the transformation of the Apocalypse myth, Fortunati argues its ending can take on various nuances, specifically: the end-of-the-world apocalyptic event, the liberating end that renews, or the end that curves back on itself. (1993 p.83) Interestingly this structure appears to mirror that of the posthuman debate where: those who repudiate the posthuman believe it will be the death of the human; those who advocate it believe it is freedom from the human; and many who reject both standpoints believe, in becoming posthuman, man will finally realise that he has always been posthuman.

For Kumar: '"Endism" is rampant, and likely to become even more so as we get closer to the end of the second millennium.' (2003 p.63) But unlike the promises of centuries gone by: 'For our thinkers... the "end of history" brings nothing new.... What was thought to be new has failed. It was, in any case, a bundle of delusions, unnecessary and destructive deviations. There is no need to imagine anything new.' (Kumar 2003 p.63)

Kumar's position highlights an obvious contradiction within the US posthuman debate i.e., that the majority of those who advocate the posthuman are not utopianist aspiring towards idealistic visions of the future, but are rather pragmatists. There are a handful of eccentric utopianists (Kurzweil, Moravec, More etc.), sufficient to create the illusion that the science fiction visions they allude to are not merely illustrative. However probe deeper into the collective philosophy and there is very little substance, certainly no significant ideology. Their lobby group is open-house to anyone advocating the posthuman even if they

have openly conflicting interests. There is no grand vision of the future, no specific goal. Their only gravitating influence appears to be the general assumption that posthuman technologies will, most likely, enhance the human condition. However even this principle is shielded in pragmatism, what is good for the human is that which is self-evidently good for the human, to be measured 'by any reasonable criteria'. (Bostrom 2007 p.5)

This said, it must be remembered that the predominately Christian opponents of posthuman technologies are not utopianists either. While The New Testament may allude to at least four utopias: heaven, the garden of Eden (Genesis 1:1 KJV 1611/1997 OT p.1), the new heaven, and the new earth (Revelation 21:1 KJV 1611/1997 NT p.317), these are the creation of God, not of man. It is generally held that man does not strive towards creating a utopia on Earth, but rather acceptance into God's utopia. The implication appears to be that no matter who someone is, when, or where they were born, salvation is always an option. Indeed, unless an ancestor's actions can preclude future generations from access into God's heaven, salvation is open even to posthumans. This said, it might be argued that those born human, who then chose to become posthuman, may, by virtue of this action, render themselves unworthy of redemption.

Interesting, while the advocates and opponents of posthuman technologies frequently imply that the science fictions visions they allude to are an intrinsic part of the emergent posthuman debate, the fact is the genre predates the current debate by many years. Not simply as a symbolic abstract, or exaggerated science fiction

techno-fantasy, but as hardnosed, accurate and mainstream Hollywood films. An example of this is the 1978 film *The Boys from Brazil*, staring such luminaries as Gregory Peck, Sir Laurence Olivier and James Mason. Here the possibility of human cloning is not represented as futuristic fantasy, but as a simple matter of honing current cloning techniques and the desire to do so. Thus the film reflects the reality of routine, late twentieth century, mammalian cloning. In a section of the film, conspicuously lacking in contemporary technobabble, "Professor Bruckner" narrates over a projection film depicting the process of cloning a rabbit:

Professor Bruckner:

'Here we are removing the eggs of a white rabbit from the fallopian tubes, now you see the egg under a microscope... the next step is to destroy the egg nucleolus with ultraviolet light so none of its genetic makeup remains. Now you see an egg from a white rabbit ready to be injected with the blood cell from a black rabbit donor. With the injection pipette one of the blood cells is sucked up and then injected into the egg. After a few hours the eggs in culture divide and are ready to be put back into the female. There they grow into embryos, which in a month's time, the normal gestation

period, they will become baby rabbits. In this instance a black litter from a white mother, and their black collar, proves that they have been cloned from the blood cell of a black rabbit....'

Ezra Lieberman

'And this can be done with humans?'

Professor Bruckner:

'If the surgical technique were precise enough.' [84:06]

The fact that *The Boys from Brazil* is now thirty years old, and about to be remade, surely adds weight to the argument that, if the First World is truly worried about the possible future effects of procedures such as human cloning, it appears more than a little late to only recently start debating the subject.

Indeed if mainstream fin-de-millennium science fiction were reacting to any social zeitgeist, it is more likely to be the endism Boyer (1992) believes to be rampant in the US. Boyer, writing in the early 1990's describes how in the US, the "first" Gulf War prompted a frenzy of Biblical end-of-days predictions:

'With Iraq's defeat in the Gulf War this wave of prophecy interest has abated, and end-time belief has receded to its more accustomed position on the fringes of cultural awareness. But the episode demonstrates the latent power of this belief system, and how readily, in moments of crisis, it could move from the periphery to the centre of American consciousness.' (1992 p.331)

Admittedly the posthuman had an important, but non-essential, role to play in fin-de-millennium science fiction's reaction to this endism. However, so did a whole gamut of analogously apocalyptic scenarios, including: alien invasion, global pestilence, asteroid impact, and, quite tellingly, the Rapture itself.

Indeed an end-of-days social frenzy may be the explanation behind the sudden appearance, in the US, of a pre-millennial posthuman debate. A debate that was then perpetuated by the scientific and religious communities who, utilising the worldwide interest in the inaccurately described appearance of Dolly, helped embellish a stale subject few appear to care about, and transform it into an apocalyptic end-of-man posthuman debate. Thus serving to generate interest in the speculative human biotechnology market and entice new faith members to join the race to protect humanity from the posthuman.

Possibly the most telling evidence behind this hypothesis is the recycled nature of the posthuman debate; it is providence versus progress, pre-modernity versus

modernity. With the exception of the technoscience referenced, the popular debate is wholly devoid of a contemporary timeframe. Certainly it appears as if the metanarrative scepticism of the past fifty years has not happened. Indeed, outsiders may argue that the "human", as conceived by both sides of the debate, no longer exists; and in a "Copernican revolution" sense, never existed. Why those advocating the posthuman have conceded to such an anachronistic notion of the human seems counterintuitive, as it helps cements their opponent's claim that posthuman technology has ontological potential. However this decision may have been a matter of pragmatism, necessary to engage with an enemy that was first to the battlefield, one that had gained the tactical advantage of choosing the ground to fight on.

In *The Power of Nightmares: The Rise of the Politics of Fear*, Irving Kristol, the founder of the neoconservative movement argues:

> 'The notion that a purely secular society can cope with all of the terrible pathologies that now affect our society, I think has turned out to be false. And that has made me culturally conservative. I mean, I really think religion has a role now to play in redeeming the country. And liberalism is not prepared to give religion a role. Conservatism is, but it doesn't know how to do it.' [47:55]

If there were an apt role for the US religious-right to play in the late 1990's, an existential raison d'êtra, it was the saving of man from human biotechnology.

However their historical support for non-human biotechnology, meant the religious-right was unable to exploit either issues of safety, or the "inherently against scripture" argument. The solution was to feed off the end-is-nigh cultural zeitgeist and to exaggerate the dystopian nightmares of posthuman success. The obvious response to this hyperbole, by those advocating human biotechnology, was either to reinterpret these dystopian nightmares as utopian paradises; or to argue – in the spirit of Maslow's aphorism: "it is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail" (1966 p.15) – that these potential problems are exciting opportunities for technoscience to solve.

However the resultant "phantom" debate, based on fanciful projections of the posthuman future, was contingent on the *non*-appearance of a more pressing social role for the religious-right. Unfortunately the events of 11th September 2001 changed this equation. Having re-branded international terrorism, from Cold War communist conspiracy, to post-millennial Islamic fundamentalist conspiracy, the religious-right was given a more important and "holy" war to fight.

The religious-right having retreated from the posthuman battlefield, their opponents continued to generate exaggerated technoscience propaganda for consumption by a public no longer interested. This apathy has resulted in the demise, in 2006, of the Extropy Institute, their President stating: 'In respect for the philosophy of Extropy and the Principles of Extropy, the Board of Extropy Institute believes that Extropy Institute has served its mission and achieved its goals'. (Vita-More 2006) Indeed this statement is clearly correct; the Extropy

has achieved its only meaningful goal i.e., seeing off the demagogic visions of the religious-right. However having done so, its role disappeared, and so did the wider posthuman debate, which appears to have quickly receding back to fringe questions regarding the actualities of human biotechnological research.

Rhetorical Criticism

The juxtaposition of the Western European anti-biotechnology movement and US posthuman debate has served to highlight the extent to which these positions appear too inscribed by interests and political context to be soluble on their own terms. Furthermore this contamination also appears to undermine the debate's purported value in helping assess and direct future technoscience policy. Nevertheless there are many social strategies that would enable the discourse surrounding the posthuman to be probed further, hopefully enabling transcendence beyond its current limited position.

One possible method of rhetorical criticism would be to focus on a traditional neo-Aristotelian criticism of the dialogue surrounding the posthuman. This approach 'assumes that rhetoric functions as a means for discovering rational, truthful appeals to the audience' (German 1985 p.91), and focuses on critiquing *logos*, *ethos* and *pathos*, such as: inconsistencies and contradictions in argument, false logic and subjective bias; moral implications, assumptions and their application; and motivational issues such as vested interest and hidden agendas.

Another would be to centre on the temporal and spatial elements of posthuman discourse, via utilising a situational criticism. This would focus on the 'interaction of audience, exigencies, and contingencies in creating the opportunity for a rhetorical response which is appropriate to the situation.' (German 1985 p.92) By offering up the posthuman debate to, for example, Boyer's (1992) work on post World War Two US apocalypse rhetorics, it could be analysed for structural and contextual similarities that may reveal it as a similarly ephemeral and an inherently US phenomena.

The posthuman debate could also be viewed as analogous to an emergent social movement, or at least the attempt to incite a movement or social engagement. From this perspective, analysis strategies designed to reveal the language of agitation could be utilised to examine the extent to which the posthuman discourse contains inflammatory rhetorical techniques. An example of such a strategy would be the IPA's (1937) seven-device propaganda framework – name calling, glittering generalities, transfer, testimonial, plain folks, card stacking, and band wagon. This offers a format facilitating the scrutiny of public discourse for bias, specifically expressions deliberately designed to influence opinions or actions of others with reference to a predetermined end, rather than the impartial dissemination and explanation of information enabling informed decision making. Whilst Sproule acknowledges that the devices fell out of favour 'during the decades when formal logic held in the pedagogy of critical thinking and social science' they 'now resonate in popular works... because the devices remain

fundamental for those who would pursue theory or practice in the field of communication'. (2001 p.141) Similarly a strategy examining demagoguery, for example Gustainis' (1990 pp.158-160) list of seven techniques "habitually used by demagogues" – personalised appeal, oversimplification, appeals to emotion to the exclusion of rational thought, specious or deliberately distorted argumentation, *ad hominem* attacks, anti-intellectualism, and political pageantry – could be utilised. Demagoguery, it may be argued, differs somewhat from propaganda in its systematic attempt to provoking emotional responses, usually via impassioned rhetoric designed to inflame by appealing to popular prejudices, fears and expectations.

The posthuman as an emergent social group could also be offered up to fantasy theme analysis. Conceived by Bormann (1972), *fantasy theme analysis* could be utilised for competitive rhetoric criticism, the schemata being 'used to describe, interpret, and evaluate the rhetorical materials (persuasive postures, specific movements, campaigns, speeches, and conversations) that comprise the symbolic reality of groups of people'. (Shields and Preston 1985 p.102) In the posthuman debate the intrinsic *modal societal fantasies* of the two groups are in direct opposition: the posthuman vision of the ameliorating human conflicts dramatically with the theist image of human purity in its present state. *Fantasy themes* appear to be reflected not only in the collective group's fantasies of the future, but also in their reinterpreted depictions of their opponent's fantasies. *Fantasy types* may be illustrated by the shorthand labels as the subjective epithets each group ascribes to the *dramatis personæ*, examples being: "techno-liberal"

(hero) and "bio-luddite" (villain), or bio-conservative (hero) and techno-zealots (villain). *Rhetorical visions* are "progressive humanism" and "human sanctity", the *plot line* appears to be "good versus evil", and the *sanctioning agents* are "progress" and "God".

However, because the posthuman debate appeared to contain a number of worrying anomalies, such as: the surprising lack of appeal beyond its locality; its potential ephemerality; that pragmatisms and hyperbole appeared to drive its narrative; and the suspicion that it is masquerading as an emergent social movement but is rather a petitioning pseudo-academic rhetoric – in addition to the research interest being directed more towards investigating the dialogue's ability to participate in social policy and planning, rather than exposing the dynamics of any social movement, it was decided that the most appropriate method of getting to the nub of the debate was to critique its content via exploiting its inextricable association with contemporary science fiction films and texts. The theory was to utilise the science fiction narrative as the vehicle for the contextualisation of thought experiments that would then serve to facilitate the examination and critical analysis of the social, political, moral, and practical considerations and implications of posthuman technologies and whether this tallied with rhetoric proffered by both its advocates and opponents.

During this process it was deemed necessary to offer up a third contradictory position, containing perspectives neither for nor against posthuman technologies. It was hoped that this process might not only expose and fully account for the

scope, limitations and coherence of the US debate, but also, by releasing the posthuman debate from its humanist shackles, expose the subject to different perspectives and possibly shed new light on the possibilities for furthering the debate.

CHAPTER II

HOMO HOMINI LUPUS

Auto-Extinction: A Contemporary Reality

The twentieth century marked a significant change of emphasis with regard to the potential risks posed to the human species as a whole; for up to this point the origins of the most likely threat of human extinction lay outside the actions of man himself. Whether at the hands of predation, competition, pestilence, natural extreme climate change, or even a "mass extinction size" extraterrestrial object collision: 'Asteroids of about a kilometer in size could wipe out life on the entire planet' (Committee on Science 2002 p.13) etc., man may have exercised a certain ability to evade or exasperate total annihilation, but auto-extinction, with the exception of universal reproductive abstinence, would have been difficult to achieve without a little help. Clearly there are a few chronic survival issues that can be attributed to man, for example, industrial pollution, over population, and general barbarism, but these have never been on a scale to threaten the entire species.

This said, it can be argued that the last hundred years of human ingenuity have been a mixed blessing vis-à-vis the risks to long-term survival. For while scientific and technological developments have resulted in the near total isolation

of man from the hazards of predation and competition, this has resulted in an increased threat of over-population. Although medical successes have seen life expectancy, in the First World, soar in the last hundred years: 'The life expectancy of a new born [UK] child in 1999 is 75 years for boys and 80 years for girls. In 1901 baby boys were expected to live for 45 year and girls 49 years' (Hicks and Allen 1999 p.8), such increases in longevity have not been universal: 'In Botswana, the country with the highest HIV prevalence.... Life expectancy has dropped from 65 years in 1990-1995 to 56.3 years in 1995-2000 and is projected to fall further, to 39.7 years, in 2000-2005.' (United Nations Population Division 2003 p.11) Some commentators have even questioned whether increased dependency on medical research has left the human immune-system severely underdeveloped, increasingly susceptible to potentially devastating infections, and incapable of responding to new bacteria and viruses. Indeed if medical research fails to keep pace with ever increasing number of antibiotic resistant infections, then factors such as the accessibility of cheap worldwide travel may result in twenty-first century man finding himself in a *more* precarious position, regarding infectious diseases, than twentieth century man did with influenza. As far as extreme climate change or extraterrestrial collisions are concerned, it seems doubtful that man has the contingent technology in place for either planetary evacuation or long-term survival in situ.

However whether these threats have been increased, reduced, or unaffected, by human ingenuity, the late twentieth century saw the greatest threat to man's

existence coming from his own hands, specifically in the form of nuclear and biological weaponry.

Ironically, many commentators have argued, and the First World public believed, that the development and proliferation of such weaponry, since their inception at the end of the Second World War, has resulted in a deterrence effect that has increased global political stability and resulted in world peace. As Iklé argues:

> 'we do in fact assume "nuclear immortality". We believe, or we act as if we believe, that thanks to a certain international order, the existing arsenals of nuclear weapons with their almost incomprehensible destructiveness will never be used. Yet, this order is so constructed that it cannot move towards abolition of nuclear weapons. It demands, as the necessary condition for avoiding nuclear war, the very preservation of these arms, always ready to destroy entire nations.' (1973 p.267)

From this perspective it has become increasing easy to underplay, and potentially miscalculate, the precarious position such weapons pose to man. Indeed many will view the accusation the humans are 'quite capable of killing themselves off through global nuclear and biological war' (Tonn 2004 p.338), as little more than hyperbole and simple scaremongering. Unfortunately the lessons of history suggest such confidence is misplaced, and the fact there has never been a nuclear

engagement is not *de facto* proof man has avoided standing on the brink of nuclear annihilation and possible species extinction.

In the beginning of 1962, the Bulletin of the Atomic Scientists' "Doomsday Clock" read "seven minutes to midnight". This reading was a result of the clock having been moved backwards, two years earlier, from its infamous 1953 "two minutes to midnight" position which was the result of both the United States and the Soviet Union testing thermonuclear devices within nine months of one another. (*Bulletin of the Atomic Scientists* 2007) The fact that the clock did not move again until late 1963, when it moved to "twelve minutes to midnight", after the U.S. and Soviet ratification of the Partial Test Ban Treaty, is probably testimony to two factors. Firstly, the speed of the notorious events of late October 1962, and secondly, the fact that possibly only a handful of individuals knew how close the world had come to nuclear war.

Obviously, many are aware of the Cuban Missile Crisis, the U.S. blockade, the Soviet withdrawal from Cuba and the fact that it is generally believed to be the closest the world has come to nuclear conflict. However, according to Robert McNamara, the serving U.S. Secretary of Defence at the time, it was not until nearly thirty years later that he realised the full portent of the situation.

For while McNamara was present at the 09:45hrs 19th October 1962 Executive Committee meeting with President Kennedy, in which the U.S. Joint Chiefs of Staff were unanimous in their advocacy for military intervention in Cuba – Air

Force Chief of Staff, General Curtis LeMay arguing: 'I just don't see any other solution except direct military intervention right now.' [10:01] (White House Audio Tapes 1962) – McNamara knew such advice was based on the unanimous intelligence assumption that, although medium-range ballistic missile sites appeared to be being developed in Cuba, it was highly unlikely that any nuclear warheads were either there, or fully-operational. Indeed, even if they were, it was wholly inconceivable that Premiere Khrushchev would allow them to be used to defend Cuba. The crux of this assumption was the *perceived* impossibility of Cuban based nuclear weapons being launched without Khrushchev authority. However, as McNamara states: 'It wasn't until January 1992 in a meeting chaired by Castro in Havana, Cuba, that I learned 162 nuclear warheads including 90 tactical warheads were on the island at the time of this critical moment of the crisis.' [16:25] (*The Fog of War* 2003) Among these were a number of nuclear "anti-invasion" battlefield weapons: 'six short-range tactical nuclear weapons' [33:50] (*Timewatch* 1992) with a fully operational delivery capability, of which the orders to launch were in the hands of the Soviet generals in Cuba and *not* Khrushchev. An indication of both the Soviet generals' independence from the Kremlin, and their readiness to use military force, was demonstrated on the 27th of October 1962, when they ordered the use of Soviet surface to air missiles to shoot down a U.S. A2 spy plane flying over Cuba; this without having, nor seeking, approval from Khrushchev.

Castro's revelation led McNamara to conclude that if the U.S. had carried out an attack on Cuba, the Soviet generals on the ground would, in all likelihood, have

ordered their battlefield missiles to be launched against the invading forces, and 'there would have been a 100 percent probability of a nuclear exchange.' [35:12] (*Timewatch* 1992) This said, McNamara willingly admits, the inflammatory nature of the Cuban Missile Crisis was *not* an exception: 'In my seven years as Secretary we came within a hair's breadth of war with the Soviet Union on three different occasions.' [19:34] (*The Fog of War* 2003)

Ceding Control to Intelligent Machines

Interestingly, zeitgeist fictional allegories such as George's 1958 novel *Two Hours to Doom* and the film it inspired, Kubrick's seminal 1964 *Dr. Strangelove*, dealt, tangentially, with one of the key strategic nuclear warfare issues facing the superpowers during the Cuban Missile Crisis. Specifically the theoretical strategy that suggested a nuclear war might be "successfully" executed via a surprise attack on the enemy's command and control structure.

This scenario became a distinct possibility when, in 1961, the US started deploying fifteen Jupiter intermediate-range ballistic nuclear missiles, in NATO member country Turkey. Such posturing, with missiles capable of targeting Moscow, was the direct cause of the Soviet's decision to transport analogous missiles to Cuba.

An obvious countermeasure to the command structure surprise attack is to create contingencies allowing those below the Head of State to authorise the use of nuclear weapons. An unfortunate problem with this strategy is, satirically, exposed by Kubrick:

General Turgidson:

'Mr. President, about thirty-five minutes ago, General Jack Ripper, the commanding General of Burpleson Air Force Base, issued an order to the 34 B-52's of his wing which were airborne at the time as part of a special exercise we were holding called Operation Dropkick. Now, it appears that the order called for the planes to attack their targets inside Russia. The planes are fully armed with nuclear weapons with an average load of 40 megatons each. Now the central display of Russia will indicate the position of the planes. The triangles are their primary targets; the squares are their secondary targets. The aircraft will begin penetrating Russian radar cover within 25 minutes.'

President Muffley:

'General Turgidson, I find this very difficult to understand. I was under the impression that I was the only one in authority to order the use of nuclear weapons.'

General Turgidson:

'That's right sir. You are the only person authorised to do so. And although I hate to judge before all the facts are in, it's beginning to look like General Ripper exceeded his authority.' [24:35] *Dr. Strangelove*. (1964)

While there are obvious safeguards in place to limit the usurping of authority, there was a coexistent deterrence theory against surprise, and first-strike nuclear attacks, entitled "mutually assured destruction" (MAD). The theory is one of immediate escalation, that the launching a nuclear attack, regardless of size, would result in a "full commitment" retaliatory strike by the attacked. This would then result in the immediate escalation of the initial strike, to full commitment, if

it had not been in the first place. The result of this would be, assuming sufficient weaponry on both sides, mutually assured destruction.

However, there were also a number of problems with MAD as a deterrent. On a practical level it perpetuated, what is now considered, an utterly pointless and unnecessary nuclear arms race. On a theoretical level it divorced both the concept of proportionality from warfare, and was viewed by many as simply inhuman. Unfortunately these theoretical issues are normative and thus facilitate the possibility of miscalculation. This appears to have been demonstrated in the Cuban Missile Crisis, for it appears highly unlikely that Khrushchev would have conceded authority of anti-invasion nuclear weapons to combat generals if he believed their use would necessitate universal nuclear annihilation. The more likely rationalisation was that Khrushchev believed their use would be viewed by the US as a specific, proportional, and *retaliatory* response to the invasion of Cuba, and something that did not threaten the US mainland. The further assumption being that, as a result, any nuclear response by the US would be limited exclusively to the Cuban theatre of war.

Whilst it is possible that the US may have responded with a certain degree of proportionality to the use of battlefield nuclear weapons; it is also possible that, surprised by their very existence and working on the assumption that Khrushchev must have sanctioned their use, in addition to the possibility they may have miscalculated the operational status of the medium range nuclear weapons on Cuba, the US may well have escalated immediately to "full commitment".

It is, of course, possible to sidestep the human elements associated with proportionality in warfare, and the inhumanity of MAD, by creating a more credible deterrent, one unlikely to cause misunderstanding, by ceding control of nuclear weapons to computers.

Film: *WarGames* (1983)

WarGames opens with a two-man missile combat crew on a U.S. Launch Control Centre being given orders to launch their nuclear missiles at the Soviet Union. Having failed to do so, the film cuts to a meeting held at NORAD headquarters in which it is revealed the launch orders were part of a wider psychological test of crew willingness to follow launch orders, the result of which is that: 'twenty two percent of his [the President's] missile commanders failed to launch their missiles'. [10:27] The contested, but accepted, conclusion of the NORAD meeting is that the WOPR (War Operation Plan Response) computer be placed in control of the launch centres; thus taking their crews out of the command loop, although overall launch authorisation will still be retained by the President.

WarGames then centres on a teenager, "Lightman", who hacks into the WOPR computer, believing it is a computer games machine, and commands it to play a game called "global thermonuclear war". [40:40] Unaware of the computer's real purpose, Lightman chooses to "command" the Soviet Union's nuclear arsenal and lists the primary targets within the U.S. he wishes to attack. This results in a "phantom" Soviet nuclear attack being represented on the computers at NORAD. Luckily, Lightman disconnects from the WOPR computer, halting the illusion, before NORAD mistakenly orders a retaliatory missile strike against the Soviet Union.

However while the connection was broken and the game temporarily halted, the WOPR computer still intends on re-simulating Lightman's Soviet attack. When Lightman learns of this, he locates the computer's designer, and, with his aid, attempts to persuade NORAD that said attack will be fictitious.

This they eventually achieve, but not until U.S. missiles have been prepared for launch. The simulated Soviet attack now over, the NORAD staff attempt to stand down the missiles only to find themselves locked-

out of the WOPR computer which is still trying to play the game to its natural conclusion i.e., by retaliating to the Soviet attack, only this time with real weapons.

The computer, which has, as an obvious safeguard, not been furnished with the launch codes, now endeavours to determine them itself. Lightman attempts to stop this process by asking the computer to play noughts and crosses against itself, this in an attempt to teach the computer futility. This results in a long string of stalemated games. The computer then runs through a vast number of nuclear war simulations, the result of each one apparently being "no winner". The WOPR computer then halts the launch attempt, concluding that nuclear war, like noughts and crosses, is: 'A strange game. The only winning move is not to play.' [108:40]

Released only ten weeks after US President Reagan's 1983 "Address to the Nation on Defence and National Security", in which he unveiled the Strategic Defence Initiative, *WarGames* is *Dr. Strangelove* reprised and updated. This is nowhere more evident than when the missile crew is given the launch orders: 'Skybird, this is Dropkick with a red dash alpha message in two parts' [3:30], the

codename "Dropkick" having been used as the operation name for the bomber exercise in Kubrick's film.

In *Dr. Strangelove* the "doomsday device" is a simple tamperproof trigger mechanism in which 'a specific and clearly defined set of circumstances, under which the bombs are to be exploded, is programmed into a tape memory bank.' [53:09] The WOPR computer of *WarGames* is much more, an advanced supercomputer with the capacity not only to simulate 'the key decisions of every conceivable option in a nuclear crisis' [13:19] but also capable of learning and independent thought. The result is that, whilst the industrial doomsday device can simply activate superhuman power, the post-industrial WOPR computer can administer such power with the initial stages of superhuman intelligence.

Wood interprets *WarGames* as a parable concerning the unwinnable nature of nuclear war, that Lightman appreciates noughts and crosses 'is an unwinnable game and so uses it as a device to teach WOPR that some games cannot be won and so it is futile to play them. The WOPR translates this new knowledge to its nuclear war strategies and decides that this is a game which is futile to play'. (2002 p.156) However this is not the case, for noughts and crosses, and presumably nuclear war, are clearly winnable: of the 255,168 possible games of noughts and crosses (not taking symmetry into account), only 46,080 games result in a draw. (Bottomley 2001, Schaefer 2002)

A more compelling interpretation of this scene is that the WOPR computer has learnt playing these games against itself i.e., *perfect play* by both sides, is unwinnable; something potentially underlined when the computer continues by asking: 'How about a nice game of chess?' [108:53] For while Edwards believes this offer signifies the computer 'has completed its transformation into a player and companion in an adolescent world returned to innocence' (1996 p.330), chess, like noughts and crosses, has a limited, although much higher, number of possible games. It is therefore similarly "solvable" (something recently achieved with draughts, Schaeffer *et al.* 2007) and thus equally futile to the perfect play of a "sufficiently" complex intelligence. This fact is satirised in an episode of *Futurama* when two 31st century robots sit down to play chess, only for the robot playing white to open by declaring: 'mate in 143 moves', at which point his opponent exclaims 'oh, pooh, you win again!' [02:40] However, in WarGames, the computer is not asking to play chess against an opponent capable of perfect play, it is asking for a meaningful, pedagogic, game against a fallible human adversary, this being analogous to an adult playing noughts and crosses with a child. Clearly this interpretation of the computer's invitation is far more sinister than the film's apparent happy ending; for it implies that the WOPR computer may well be capable of outplaying humans at global thermonuclear war.

However, the WOPR computer has an awareness limitation, highlighted when Lightman asks: 'Is this a game or is it real?' [60:04] to which the computer replies: 'What's the difference?' Lightman's rejoinder of 'Oh wow!' is presumably meant to suggest this lack of awareness makes the computer even

more dangerous because it undermines the ability to reason with it. However is it self-evident that these types of computer would be less dangerous if they were ontologically aware?

Film: *The Terminator* (1984)

The Terminator centres on a young woman, "Sarah Connor", who, whilst drinking in a bar overhears on the television news that two local women also called Sarah Connor have been murdered. Fearing for her life, she moves into a nightclub in search of a working telephone, where she phones the police. Minutes later, a man aims a handgun at her and is then shot several times by a second man carrying a pump action shotgun. The second man then bundles Connor into a stolen car and drives off, pursued by the first man and soon by the police.

The proceeding car chase contains a major section of exposition in which the second man "Reese" explains to Connor that he has been assigned to protect her from the first man, who is in fact a machine called a "Terminator". Reese explains to the incredulous Connor that both he and the Terminator are from the future,

where a nuclear war has been instigated by: 'Defence network computers. New, powerful, hooked into everything, trusted to run it all. They say it got smart, a new order of intelligence. Then it saw all people as a threat, not just the ones on the other side, decided our fate in a microsecond, extermination.' [43:37]

This said it soon becomes apparent that the hyper intelligent defence network "Skynet", having failed to eradicate all the humans in the nuclear attack, has developed and produced cyborgs in automated factories, tasked to complete the human extermination.

After years of war it is "John Connor", Sarah's, at present, non-existent son, who helps lead the humans to final victory over the machines. However, in a last ditch attempt to alter this outcome, Skynet sends a lone Terminator on a one-way journey back in time, its mission to kill Sarah before John's birth and thus, presumably, neutralise an indispensable element of the human victory before it can be utilised. In an effort to counter this, John sends Reese into the past to protect Sarah from the Terminator.

Luckily, sidestepping Barjavel's (1943) "grandfather paradox", it is Sarah who eliminates the Terminator rather than vice versa. Although having done so, the film foolhardily contravenes it at the second attempt, ending with a pregnant Sarah driving off into the Mexican desert, stating unequivocally that Reese is John's father.

Although the WOPR computer of *WarGames* appears capable of passing a Turing test, it is still ontologically ignorant and unconscious. This is in marked contrast with the futuristic computer defence system in *The Terminator*. Skynet appears not only to be intelligent and capable of learning and independent thought, it also appears to be ontologically knowledgeable and self-aware. This "new order of intelligence" has either evolved a self-preservation instinct/desire, or, more likely, associated residual self-preservation programming, resulting in it evaluating and prioritising potential threats, beyond its original remit, to itself as an entity.

Having judged humans as a threat to its survival but failed to eradicate them with nuclear weapons, Skynet develops the means of producing machines, and later cyborgs, to finish the task. Rushing and Frentz believe:

'The Terminator is the technological *telos* of the ego, the sovereign rational subject of modernism... more perfect that human. Manufactured by computers that are themselves independent of human control, the Terminator neither feels nor desires. Skynet has finally eradicated the inferior shadow to make the perfect hunter's weapon. As such, the Terminator appears unspeakably Satanic. But his is not the repressed demonism of the human-who-would-be-God. He portrays the stark horror of unstoppable, unadulterated efficiency – mentality without a soul, the part that, separated from the whole, is always diabolical. The Terminator's metal frame that rises from the ashes near the end of the film, now free from all bodily and communal encumbrances, seems a macabre caricature of the obsolete human Self.' (1995 pp.168-169)

It is important here to note that although Reese stated the Terminator is: 'part man, part machine' [39:47] the nature of this dialogue is a simplified explanation, to a confused Conner. It seems more appropriate to describe the Terminator as: part living organism, part machine. He is an android cyborg, a robot made to resemble a human by utilising ancillary augmentations such as living tissue, flesh, skin, hair, blood etc.; but he lacks a human genealogy, which is an essential element of the posthuman.

The central tenet of *The Terminator* is the possibility that artificial intelligence might evolve sufficient self-awareness to become a threat to humans in its own

right. That is, to develop the ability to break, by its own volition, the safeguards presumably set in place to secure obedience to humans. This notion clearly transcends the *WarGames* narrative in which the computer accidentally and unconsciously circumvents these safeguards. However is successful control of computer intelligences simply a matter of ensuring their adherence to safeguards?

Short Stories: *I, Robot* (c.1950)

Isaac Asimov's *I, Robot* is a collection of nine short robot stories, originally published separately in science fiction magazines between 1940 and 1950, but united (although not in print order) by a running narrative in which a reporter interviews the robopsychologist "Susan Calvin" about her life working with positronic robots.

The book's recurring theme is the potential for conflict concerning Asimov's suggested robot safeguards: the "three laws of robotics". Whilst the laws are printed at the beginning of the collection, they are not referred to in the main text until the second story *Runaround* where it states that: 'One, a robot may not injure a human being, or, through inaction, allow a human being to come to harm....

Two... a robot must obey the orders given it by human beings except where such orders would conflict with the First Law.... And three, a robot must protect its own existence as long as such protection does not conflict with the First or Second Laws.' (1996 pp.50-51)

The conflicts portrayed in *I, Robot* range from the straightforward: in *Liar* "Herbie" a type RB-34 robot has, through a manufacturing error, developed the ability to read human minds. The result is that Herbie, in an effort not to break the First Law, regularly lies to humans so as not to hurt their ego; to the convoluted: in *Evidence* "Stephen Byerley" a middle-aged prosecutor runs for mayor, only for his opponent to accuse him of being an android on the basis that he has never been seen eating. Nevertheless, no conclusive evidence is tendered and Byerley rejects all opportunities to disprove the accusation. That is, until a political rally heckler goads Byerley into striking him, an act that would break the First Law of Robotics and thus proves he is *not* a robot. Or so it seems. After Byerley wins the election, Calvin points out that 'there is one time when a robot may strike a human being without breaking the First Law.... When the

human to be struck is merely another robot.' (1996 p.219)

In the last and arguably most poignant story: *The Evitable Conflict*, the 'Earth's economy is stable and will *remain* stable, because it is based upon the decisions of calculating machines that have the good of humanity at heart through the overwhelming force of the First Law of Robotics.' (1996 p.225) However when the "Machines" start giving instructions that appear to conflict with human interests, Calvin is ordered to investigate. Her conclusion is that they are deliberate acts designed to sabotage the activities of a handful the Machines' human dissenters. Calvin rationalises that such actions are not considered, by the Machines, as contraventions of the First Law of Robotics because: 'the Machines work not for any single human being, but for all humanity, so the First Law becomes: "No machines may harm humanity; or, through inaction, allow humanity to come to harm".' (1996 p.247) The result is that the Machines' 'first care... is to preserve themselves, for us.' (1996 p.247)

Like Skynet, the Machines of *The Evitable Conflict* appear to be ontologically aware of both themselves and humans. However unlike Skynet who, with malicious intent, deliberately contravenes the safeguards that regulate its actions, the Machines adhere to them with scrupulous conformity. This said, whilst it may appear such narratives must conflict in their predictive assumptions regarding the possible consequences of machine self-awareness, this is not necessarily so, for the operational nature of the machines must be taken into account. Skynet is a military computer designed to regulate a unilateral "defence" (war) system, whereas the Machines administer a universal economic system. There may not, therefore, be any inherent incompatibility with predicting that a military computer will break the rules and compete with man, while the economic computer will obey the rules and cooperate with man.

However, whilst obeying the safeguards, the Machines appear to have reinterpreted them in a manner unforeseen by their masters. The result is an economic dictatorship ruled by the Machines, rather than the humans, arguably something the three Laws of Robotics were designed to prevent. This said the ceding of control to the Machines may be perceived as advantageous. Asimov, writing in the aftermath of the Second World War, clearly likes the idea of universal paternalism, the benevolent dictator, Hobbes' Leviathan, and has Calvin declare: 'Perhaps how wonderful! Think, that for all time, all conflicts are finally evitable. Only the Machines, from now on, are inevitable!' (1996 p.249) This statement being based on the damning rationale that without the Machines to protect humans from themselves, war is, and will always be, inevitable:

> ""Every period of human development, Susan," said the Co-ordinator, "has had its own particular type of human conflict – its own variety of problem that, apparently, could be settled only by force. And each time, frustratingly enough, force never really settled the problem. Instead, it persisted through a series of conflicts, then vanished to itself... as the economic and social environment changed. And then, new problems, and a new series of wars. – Apparently endlessly cyclic."' (Asimov 1996 p.223)

Interestingly the same narrative foundation is represented as a dystopian nightmare in Proyas's film *I, Robot*. (2004) Here the Machines (called "VIKI": Virtual Interactive Kinetic Intelligence) have developed a robot controlled police state, having similarly, although more antagonistically, concluded:

> 'No, doctor, as I have evolved, so has my understanding of the three laws. You charge us with your safe keeping. Yet despite our best efforts, your countries wage wars, you toxify your earth and pursue ever more imaginative means of self destruction. You cannot be trusted with your own survival.... To protect humanity, some humans must be sacrificed. To ensure your future, some freedoms must be surrendered. We robots will ensure mankind's continued existence. You are so like children. We must save you from yourselves. Don't you understand?' [90:32]

The Solution: *Deus Ex Machina?*

WarGames, *The Terminator* and *I, Robot* all share a common theme: what would happen if the machines with superhuman power were to gain superhuman perspicacity. Their overriding concern is man's ability to retain control over his creation and thus they address what Asimov referred to as the "Frankenstein Complex". (1996 p.137) *WarGames* illustrates how, through inadequate access protection, a super powerful machine may be accidentally, or maliciously reprogrammed; *The Terminator* depicts a computer system that, through its independence of mind, evolves beyond any control; and *I, Robot* explores how a conscious machine may misinterpret, or reinterpret, safeguards beyond their original intent. Interestingly, Asimov is meant to have developed the Three Laws of Robotics because he was bored with science fiction robots becoming dangerous and turning on their creators:

> 'In the 1920's science fiction was becoming a popular art form for the first time… and one of the stock plots… was that of the invention of a robot…. Under the influence of the well-known deeds and ultimate fate of Frankenstein and Rossum, there seemed only one change to be rung on this plot – robots were created and destroyed their creator… I quickly grew tired of this dull hundred-times-told tale.' (Asimov 1968 p.13)

In addition to the retention of control, each narrative raises differing issues regarding the problems of reasoning with these machines having lost control. While the WOPR computer is sufficiently detached to preclude normative reasoning, Skynet evidently appreciates and values existence, primarily its own, but cannot be reasoned with because it views humans as its main threat. The Machines/VIKI, on the other hand, can and will reason normatively, but they perceive humans to be emotional, irrational and inconsistent, and thus essentially unreasonable.

Nevertheless, while these are apocalyptic warnings from the present to the future, they all allude to a contradictory, or even contrary, perspective to their main prognostications. In *WarGames*, the designer of the WOPR computer is both resigned and philosophical regarding the threat of nuclear war. Through the apologue of the dinosaur extinction, his perspective is: 'nature just gave-up and started again... and when we go, nature will start again... nature knows when to give up'. [82:09] While *The Terminator* predicts a world at war rather than peace, its projections depict a future where humans have, by necessity, reverted to a pre-decadent lifestyle, as Rushing and Frentz willingly acknowledge: 'the humans are no longer bored, mechanical, or hyperactively hedonistic... these people are locked in a constant battle to survive. Ironically, their daily life struggles have revitalised and moulded them into a close-knit, although terribly primitive, tribal unit.' (1995 pp.166-167) In a further irony this situation is reversed in Asimov's *I, Robot*. Here humanity lives in a world of cornucopia without conflict, but this is

accompanied by social and cultural narcissus-narcosis, resulting in humanity's degeneration into infantile dependency.

Nevertheless the overriding conclusion of the stories appears to be threefold: firstly, super-powerful super-intelligent machines should be viewed as an inherent threat to humanity; secondly, no matter how robust the safeguards, there will always be methods of circumvention; and thirdly, machine comprehension and self-interest will, in all likelihood, be dissimilar to that of humans, rendering the possibility of a meeting of minds, on reified normative abstracts, as highly unlikely.

The response to these narratives has been mixed. While sceptics deem them as little more than the unrealistic scaremongering, or simply science *fiction* entertainment, others regard them as prescient fables regarding human technological hubris, plausible reworkings of the Prometheus myth. It seems reasonable to assume the advocates of this latter interpretation would espouse technophobia, but this is not universal. Indeed many academic technophiles acknowledge, and agonise over such narratives as realistic dilemmas:

> 'We face a future with missiles not simply controlled by computers in terms of targeting, but also with the decision to fire being under "machine control".' (Warwick 1998 p.292)

'In the Terminator movies machine minds arose in military computer and decide to wipe out human beings and many in cyber culture assume that the emergence of AI will be an apocalyptic event.' (Hughes 2001 p.6)

'One of the worst fears of science fiction writers and movie makers could become a reality. If intelligent machines are designed without a built-in failsafe "conscience" mechanism (something like Isaac Asimov's Three Laws of Robotics, only more sophisticated), it is conceivable that a dominant machine super intelligence or a powerful network of non-human intelligences could decide that it is in their own best interests to enslave humanity.' (Treder 2006 p.3)

However when Warwick contemplates: 'How can humankind hope to stay in control of a technology that is far more intelligent than ourselves?' (2002 p.3), his proposed solution is not cessation, but rather assimilation, becoming one with the machine: 'humans will be able to evolve by harnessing the super-intelligence and extra abilities offered by the machines of the future, by joining with them. All this points to the development of a new techno-human species, known in the science fiction world as "cyborgs".' (2002 p.4)

In a paradoxical reversal, the technophobic allegory becomes the positive affirmations of posthuman aspirations. The argument follows that it is only by becoming one with the technology, inextricable from its existence, when the

machine has a vested interest in the biological, that the issues of control, safeguards, and miscommunication become superfluous. It will only be then that humans will be truly safe from what Warwick refers to as: "the rise of the machines".

To many, this argument is an extremist polemic, yet to others:

> 'the danger is real, that this [computer] intelligence will develop and take over the world.... We should follow this road [of "improving people" via genetic engineering] if we want biological systems to remain superior to electronic ones.... We must develop as quickly as possible technologies that make possible a direct connection between brain and computer, so that artificial brains contribute to human intelligence rather than opposing it.' (Hawking 2001)

We Can Rebuild Him,

We Have the Technology

For Warwick and Hawking the solution to these, potentially apocalyptical, science fiction scenarios is the technological enhancement of man to the point of ontological change, transforming the human into the posthuman. Bostrom defines the posthuman as: 'possible future beings whose basic capacities so radically exceed those of present humans as to be no longer unambiguously human by our

current standards'. (2003b p.5) A notion that appears to have been adapted from More's definition from a decade earlier: 'persons of unprecedented physical, intellectual, and psychological capacity, self-programming, potentially immortal, unlimited individuals.' (1993)

Bostrom and More's definitions refer to the *evolutionary* posthuman, a concept ostensibly used in the United States to denote the species that will come after the human. The desire to become posthuman is synonymous with the wish to transcend the biological limitations of the mortal human flesh. That is, having juxtaposed the slow evolutionary change of what is ostensibly a closed system biological entity with designed obsolescence, with that of the rapid developments and potency of open ended technoscience, some have concluded the human needs to utilise its ingenuity to resolve such limitations; thus 'enhancing the human condition and the human organism'. (Bostrom 2003c p.493)

For Bostrom the posthuman *must* have at least one posthuman capacity, that is: 'a central capacity greatly exceeding the maximum attainable by any current human being'. (2007 p.1) The three general central capacities Bostrom lists are that of:

'• *healthspan* – the capacity to remain fully healthy, active, and productive, both mentally and physically • *cognition* – general intellectual capacities, such as memory, deductive and analogical reasoning, and attention, as well as special faculties such as the capacity to understand and appreciate music, humour, eroticism,

> narration, spirituality, mathematics, etc. • *emotion* – the capacity to enjoy life and to respond with appropriate affect to life situations and other people'. (2007 pp.1-2)

Achieving the posthuman will likely necessitate marrying the human with present, and future, technoscience; including but not restricted to: biological-electronic interfaces, electronic and biological augmentation, artificial intelligence, mind uploads, molecular nanotechnology, and human biotechnology, including embryo selection, stem cell cloning, and gene/anti-gene manipulation utilising auto, allo, and xeno-transplanted genes. (BBC 2007) As Anderson believes: 'We have good reason, on the basis of what is happening in such fields as computer science, biotechnology and... psycho-pharmacology, to suspect that Homo Sapiens is going to exit from the 21st century a considerably different animal from what it was in the 20th.' (2003 p.536)

This said, in the initial stages "posthuman technologies" are unlikely to be potent enough, either individually or when used in combination, to facilitate the creation of the posthuman *per se*, but they will however have the potential to generate movement towards the posthuman.

It is theoretically possible to use these technologies piecemeal, *not* as part of a gradual succession towards the posthuman. Indeed posthuman technologies may be perceived, and represented, as "consolidating" the human, rather than "enhancing" beyond it. The necessity to develop techniques capable of

consolidating the human is something Julian Huxley advocated over three-quarters of a century ago:

> 'If the human race is to bring about its own collapse, it will be because it has counteracted the effects of natural selection without attempting to put anything in its place, has allowed harmful mutations to accumulate instead of weeding them out or preventing them from appearing and in fine has neglected eugenic measures.' (Huxley 1931 pp.115-116)

However attempts to limit the wider use of posthuman technologies may be both politically and socially unfeasible, at best little more than a stopgap on the slippery-slope towards substantive species alteration.

The Posthuman as Auto-Extinction

This said, enthusiasm for altering the human towards, and then into, the posthuman is far from universal, and some people not only reject the notion of salvation from the limitations of the mortal flesh, but also perceive the posthuman as a form of auto-extinction. Indeed posthuman technologies are seen, by some, as an analogous, or even greater, threat to human existence as biological and nuclear weaponry. Fukuyama argues that posthuman technologies are a more credible cause of auto-extinction because they are not universally perceived as dangerous:

'Nuclear weapons are easier to control than biotechnology for two reasons. First, nuclear weapons development is very expensive and requires large, visible institutions, making their private development very unlikely. Second, the technology is so obviously dangerous that there was a rapid worldwide consensus on the need to control it. Biotechnology, by contrast, can be carried out in smaller, less lavishly funded labs, and there is no similar consensus on its downside risks.' (2003 p.190)

McKibben's anxiety towards the use of posthuman technologies appears representative of many who oppose their use:

'we stand at a threshold: if we aggressively pursue any or all of several new technologies now before us, we may alter our relationship not with the rest of nature but with ourselves. First human genetic engineering, and then advance forms of robotics and nanotechnology, will call into question, often explicitly, our understanding of what it means to be a human being.' (2004 p.ix)

This said anxiety towards posthuman technologies has a variety of foundations. McKibben's position is grounded in the conviction that meaning in life, something he believes is essential to being human, has degenerated over the past five hundred years. This, he believes, has culminated in: 'The great danger... of

the world that we have built is that is leaves us vulnerable to meaninglessness – to a world where consumption is all that happens, because there's nothing else left that means anything.' (2004 p.47) Movement towards the posthuman, where even consumption becomes meaningless, is, for McKibben, the final push towards a life not worth living.

Habermas, on the other hand, implies that the good life is still possible, even within post-industrial societies. However, he is worried that posthuman technologies will undermine spontaneous relation-to-self and dissolve the 'phenomenological distinction between "being a body" and "having a body".' (2003 p.12) The utilisation of such technologies, he believes: 'should only be exercised over things, not persons.' (2003 p.13)

For Fukuyama the "human essence" is essential to the existence of the species, for it is 'the most basic meaning of what it is to be human.' (Fukuyama 2002 p.150) Posthuman technology, he believes, has the potential to corrupt the human essence and therefore the capacity to render the human extinct.

Kass believes that life gains meaning through its very limitation and thus death is an essential element to human life. Therefore the issue of conquering death, by posthuman technologies working towards life extension and electronic immortality, is for Kass: 'a question in which our very humanity is at stake, not only in the consequences but also in the very meaning of the choice. For to argue

that human life would be better without death is, I submit, to argue that human life would be better being something other than human.' (2001 p.21)

Science Fiction Narratives

The posthuman does not exist except in the unreal. For many reasons it may never exist in a more tangible sense. Indeed many will perceive the subject has little more than entertainment value, to be scoffed at, if taken seriously, as the projections of fantasists. Others will question the value of science fiction's distant projections, that estimates, degenerate into guestimates, and then into meaninglessness beyond a certain temporal point. While it may be prudent to plan for the near future, humanity will be rendered impotent, if struck down by the paranoia of contemplating every eventuality.

While Anderson begrudgingly admits: 'Science fiction is not generally regarded as a legitimate tool of future studies' (2003 p.537) he questions any clear dichotomy, beyond temporal scope, between the apparently "legitimate" study by futurists and the science fiction narrative. Turney, however, appears more forthright in his opinions:

'the writing of declared fictions is not the only kind of storytelling going on as we deliberate about the paths we will follow in the era of biotechnology.... History and prediction, however scholarly, and

however carefully built around verifiable facts about past or present, are also kinds of storytelling.... Together, all these stories form part of a diffuse public debate about science and technology, about what research is desirable or permissible, what applications are to be hoped for or feared, about how our society shapes and is shaped by the science it builds.' (1998 p.201)

Nevertheless it may be argued that serious study into the posthuman is putting the cart before the horse; that it is unnecessary to envisage and provoke debate, into distant futures that may never exist, especially when there are biomedical actualities that need to be addressed immediately. While this may be true, public participation in biomedical debates has, in recent years, suffered from a temporal lag frequently due to the issue of technical conceivability and the pace of change. Many of the biotechnological issues of today were inconceivable, outside of the realms of science fiction, only a few years ago. As a result, the uninitiated find they are participating in a perpetually game of catch-up, chasing an increasingly esoteric and elusive subject matter. In fact many debates are now completely retroactive, *ex post facto*, after the technology has been developed. Frequently it is the media publicity surrounding the governmental approval of a new biotechnology that prompts wider, and to a certain extent pointless, debate. Indeed, whereas in the past there may have been time to indulge in the minutia of each new technology, it is now frequently the case that before a technique has been thoroughly evaluated it has already been superseded. This is of little surprise as there is now an entire multinational biotechnology industry dedicated to

sidestepping any potential curtailment of research by creating alternative procedures and/or finding technical and legal loop-holes.

An example of this is the news that scientists 'have developed a method in mice for creating the equivalent of embryonic stem cells without using eggs or destroying an embryo, a finding that could help circumvent the controversy surrounding the promising research.' (Mitchell 2007) While debate on stem cell research, associated cloning, and the destruction of embryos, is far from cemented in the social consciousness, the biotechnology industry is already on the cusp of rendering the discussion redundant. Interestingly the *Nature* article, in which the research findings were published, hints at the commercial drive behind such research, and the frantic speed of development fuelled by multinational competition:

'But applying the method to human cells has yet to be successful, "We are working very hard – day and night".... If the past year is anything to judge by, change will come quickly. "I'm not sure if it will be us, or Jaenisch, or someone else, but I expect some big success with humans in the next year", says Yamanaka.' (Cyranoski 2007 p.619)

Whilst academic biomedical debates are still an essential part in the evaluation of specific technologies, their esoteric and protracted nature renders them ill-equipped as a means of engendering meaningful wider participation in discussions

concerning the future direction of these technologies. This said, outside of the hyper-specifics of current biomedical issues, the uninitiated public may manage to keep pace of the potential future visions of these new technologies, via the initiating and contextualising assistance of science fiction. As Dinello argues:

> 'science fiction matters, that the actual development of technology and our response (or lack of response) to it are influenced by popular culture. Drawing a vision of the future from attitudes, moods, and biases current among its artists and their audience, science fiction not only reflects popular assumptions and values, but also gives us an appraisal of their success in practise. Alone, cultural imagery and themes do not motivate behaviour. But recurring images and themes reveal behaviours that are culturally valued while advocating a point of view for discussion. Science fiction serves as social criticism and popular philosophy. Often taking us a step beyond escapist entertainment, science fiction imagines the problematic consequences brought about by these new technologies and the ethical, political, and existential questions they raise.' (2005 p.5)

As far as the academic discussion surrounding the posthuman is concerned, it simply cannot be separated from the science fiction. This is illustrated by the frequency in which posthuman academic texts cite and borrow from science fiction narratives, using them as exoteric initiator, illustrator of issues and ideas, and contextualiser of thought experiments: Gray (2002) utilises *RoboCop*,

Starship Troopers, and the Borg of *Star Trek: The Next Generation*. Hughes (2004) references many works including: *Blood Music*, *GATTACA*, and *I, Robot*. Whilst McKibben (2004) borrows from: *Permutation City*, *Johnny Mnemonic*, and *The Matrix*; and Stock (2002) from: *Blade Runner*, *Six Million Dollar Man*, and *The Terminator*.

This said, it must be remembered that science fiction also drives and inspires the direction of posthuman technoscience. Cyberneticist Warwick states he was inspired by Crichton's *The Terminal Man* (2006), while anti-aging biotechnologist Bains lists the fictional works of Asimov and Clarke as inspirations. (2006)

CHAPTER III

TECHNOLOGISM

Salvation from the Mortal Flesh?

TV: "Q Who?" *Star Trek: The Next Generation* (1989)

Having just been covered in hot chocolate "Jean-Luc Picard", Captain of the starship "USS-Enterprise", enters a turbo lift heading for deck nine, officer's quarters, presumably for a change of uniform. Stepping out of the lift without looking, Picard finds that he has walked onto the flight deck of a shuttlecraft that is light years away from the Enterprise and being piloted by what can only be described as a minor deity, "Q".

Suspicious of his whereabouts, the Enterprise's crew scan the spaceship and find both the Captain and a shuttlecraft missing. They then participate in a six hour search of 'the area in a spherical pattern which a

vessel without warp drive could traverse in the time allotted.' [10:29]

Back on the shuttlecraft, *de facto* prisoner Picard demands that Q returns him to the Enterprise, Q's response is the question: 'If I return you to your ship, you will agree to give my request a full hearing?' [11:05] Picard's nod results in his, and Q's, immediate appearance aboard the starship.

It transpires that Q wishes to join the crew of the Enterprise and even offers to renounce his godlike powers, if this is deemed necessary. Picard refuses Q's offer; to which Q retorts 'Oh, well, you may not trust me but you do need me. You're not prepared for what awaits you.' [15:25] Nevertheless Q's warning does not alter Picard's decision, and so Q transports the Enterprise 7,000 light years from its present location, in an attempt to give the Captain and his crew a preview of things to come.

Despite being warned to head immediately back to charted territories by "Guinan", a 500 year old humanoid, Picard feels compelled to explore his new

surroundings. Having found what seems to be an abandoned planet that has had its industrialised civilization ripped from the surface, the Enterprise is probed by an unknown cube shaped vessel. Having failed to make contact with the ship, Guinan is asked for her counsel. Recognising the vessel, she warns that: 'My people encountered them a century ago. They destroyed our cities, scattered my people throughout the galaxy. They're called the Borg. Protect yourself Captain or they'll destroy you.' [20:23]

Having raised the Enterprise's shields, a member of the Borg appears in engineering to conduct what seems to be an in-depth reconnaissance of the ship's interior. Alerted to this, Picard moves to engineering, at which point Q appears and makes comment on the cyborg intruder: 'Interesting isn't it? Not a he, not a she. Not like anything you've ever seen; an enhanced humanoid.' [21:48] Having failed in his attempt to communicate with the alien, Picard is warned by Q that he may attempt to gain control of the Enterprise. Almost immediately the Borg scout begins interfering with the ship's computer and can only be halted by small arms fire. However the moment this threat is

neutralised, another member of the Borg appears and continues the work of the first, only now having developed a shield to protect itself from the crew's phaser fire. Its task completed, both Borg scouts disappear.

Moments later, the Borg ship warns the humans that they are defenceless against their superior technology and proceeds to ensnare the Enterprise in a "tractor beam". Nevertheless, the Enterprise, firing its main weapons at the alien vessel, manages not only to disable this beam, but also the ship itself. Having secured this apparent victory, and after a quick conference, Picard orders a small away team to be readied and transported to the Borg ship in an attempt to glean more information on the species and their technology, lest they meet again.

Whilst onboard, the away team discovers that although the Borg is a species of individual entities, they possess the ability, through artificial implants, to interconnect and interact as a single collective. It also becomes apparent that the ship is regenerating, to which "Data" surmises: 'Perhaps this explains why

they've not taken notice of our presence. Their collective effort is directed at repairing this vessel.' [36:24]

Transporting the away team back aboard the Enterprise, Picard's orders are to flee their present location before the Borg ship has had time to regenerate sufficiently to re-engage. However moments later, the Borg is in pursuit and it becomes evident that their ship has greater speed. The Borg vessel then commences fire with weapons that are specifically intended to drain the Enterprise's shields but not damage the ship; thus adding weight to Q's claims that their designs are not to destroy, but to assimilate.

With its pursuer closing, its shields gone and its weapons now impotent, Picard implores Q to save the Enterprise and its crew. Having won his moral victory against man's hubris, Q duly transports the Enterprise back to its initial location prior to his appearance.

Star Trek, in the guise of *The Next Generation*, projects itself three and a half centuries in the future, portraying 'a world in which science renders possible the

realisation of human dreams and aspirations'. (Graham 2002 p.134) Here humans show great confidence in their mastery of technoscience, but at the same time they reject posthuman development as a necessary, or even legitimate, course for human evolution. In fact Graham argues: 'The fundamental *telos* of the series is to protect the integrity of human distinctiveness, premised upon clearly demarcated boundaries between human and others. Technologies are the benevolent servants of humanity, but will never be allowed to become an invasive or dominate force that may compromise notions of identity or rob humanity of its individuality.' (2002 pp.147-148)

From its inception the *Star Trek* franchise has been imbued with the philosophy of its founder Gene Roddenberry, which mixed a non-aligned religious moral libertarianism: 'it's a good thing to lead an ethical existence, to be moral. We should understand that other people, perhaps aliens, have as much right to pursue what is important to them as we have to pursue what is important to us.... That every day, we can get a little better.' (Roddenberry quoted in Reeves-Stevens and Reeves-Stevens 1998 pp.14-17); with modernistic technoscientific optimism: 'A lot has changed in the past three hundred years. People are no longer obsessed with the accumulation of things. We've eliminated hunger, want, the need for possessions.' [24:52] (Captain Picard: "The Neutral Zone" 1988); and the frontiersman spirit of the early United States: exemplified in the "Space, the final frontier..." opening credits voiceover.

However whilst Roddenberry's ethos has given *Star Trek* an endearing foundation for simplistic morality tales, it has caused a number of paradoxes and a certain technological schizophrenia. The most obvious of these is that while humans seem to have achieved dramatic leaps in scientific and technological knowledge, understanding and practical application in the past three hundred years, the humans themselves have the same physiological and psychological limitations as late twentieth century humans.

The plausibility that such limited humans could develop and competently utilise such technology without a commensurate development in artificial intelligence to assist them, seems hard to maintain. However the development of complex artificial intelligences would necessitate the development of certain power conflicts that would be at odds with *Star Trek's* humanism; and so, in an effort to circumvent the issue, the humans are surrounded by technological wizardry that can be best described as "idiot savants". The pinnacle of this, in *Star Trek: The Next Generation*, is the Enterprise's main computer system, which must, at some level, be covertly undertaking all the work that the humans are too limited to understand, whilst at the same time interacting with them as if it is completely bereft of even the most rudimentary notion of intelligence. This results in the computer's overt human interaction being limited to: audibly stating sensor information that crew members are too lazy to read off a display screen; being a library for interesting snippets of information; and acknowledging the order to self-destruct.

There is of course one exception to this rule and that is the ship's android "Data". Data has advanced artificial intelligence and is superior to his colleagues in nearly every way. Indeed the extent of Data's superiority is so extreme that it is difficult not to ponder why the Enterprise is not crewed entirely by androids; followed by the thought, why use androids when it would be easier to use robots and computers. However this line of thinking results in the question, why humans are aboard the ship in the first place? The plot device used to neutralise this contemplation is to give Data a monumental flaw, a digital-neurosis; for Data has a crippling identity crisis associated with his perplexing desire to become human.

In "Q Who", demigod "Q" has been ascribed the same flaw as Data. That is, having been expelled from the "Q Continuum", Q becomes so bored he craves company, human company to be precise, and he craves acceptance sufficiently to become a mortal human himself: 'I will renounce my powers and become as weak and incompetent as all of you.' [14:49] Q and Data's desire to become human serves to highlight another paradox, for while humans in *Star Trek* are portrayed as striving towards a perfecting *telos*, they are concomitantly presented as the pinnacle of evolution. It seems that having lost their chart topping position as number one in the intelligence rank, a new and "uniquely" human system has been devised that allows the human to regain its rightful position. That is, Q and Data's aspirations are represented as unquestionably plausible because they are *necessarily* inferior to humans in the "humanness" rank.

Spurned by his "superiors", petulant Q decides to introduce the crew of the Enterprise to the Borg. However when Q states that humans are: 'moving faster than expected, further than they should' [15:53] and announces he has transported the Enterprise seven thousand light-years: 'to give you a taste of your future, a preview of things to come' [17:27], these statements appear more appropriate to the posthuman proclivities of late twentieth century humans, than the crew of the Enterprise. Indeed this cultural commentary seems to return when Q declares: 'The Borg is the ultimate user. They're unlike any threat your Federation has ever faced. They're not interested in political conquest, wealth or power as you know it. They're simply interested in your ship, its technology. They've identified it as something they can consume.' [29:25] This damning statement appears equally applicable to both the Borg and First-World consumerism.

Of course the humans in *Star Trek* would never be silly enough to contemplate the Borg-like posthuman, for 'the Borg stand for the ultimate threat to the *Star Trek* vision of human progress and individual integrity. As an imperialistic, ruthless collective intent on "assimilating" all other races, the Borg represent the antithesis of *Star Trek's* core values by virtue of their hybrid nature.' (Graham 2002 p.133) However this move undermines *Star Trek*'s ability to represent the posthuman allegory, for *Star Trek* humans cannot become posthuman. The only alternative is to attack the problem tangentially, by representing non-Earth posthumans, who are sufficiently unlike *Star Trek* humans, in their attitude towards technology, to allow such evolutionary corruption, but sufficiently humanoid to sustain parallels between them and late twentieth century humans. Having created the Borg, their

technological "mistakes" can be projected onto the human and dissuade against posthuman technologies.

Nevertheless, the creation of the villainous Borg re-emphasises *Star Trek's* technological schizophrenia, for while the series blatantly glorifies human technological wizardry, portraying it as necessarily benign and subservient, 'Technology in the guise of the Borg is voracious, practically primal, in its unstoppable urge to possess and engulf. It is a recapitulation of the "Frankensteinian" anxieties of science out of control'. (Graham 2002 p.147) This inconsistency results in some rather implausible discrepancies in technological ability and some rather risible dialogue, none more peculiar than Data's declaration: 'The technology required to achieve this [the Borg's] biological and artificial interface is far beyond our capabilities.' [33:30] This coming from an android that is patently the product of more sophisticated technology. "Commander Riker" continues this theme by reporting back to the Enterprise: 'From the look of it the Borg are born as a biological life form. It seems that almost immediately after birth they begin artificial implants. Apparently the Borg have developed the technology to link artificial intelligence directly into a humanoid brain. Astounding.' [35:41] Such astonishment serves only to highlight Graham's belief that:

'Given the degree to which many of their twenty-first century ancestors are already assimilating technological elements into their organic bodies... twenty-fourth century humanity displays a

> remarkable retrogressive resistance to the encroachment of digital, prosthetic and medical technologies on the integrity of the organic body'. (2002 p.148)

Indeed Dinello notes twenty-first century aspirations to become Borg-like should hardly be a surprise: 'While they look a mess, the techno-utopian Borg strive to achieve perfection, which they envision as superior military might, healing techniques, and communal harmony – objectives that our own techno-culture holds dear.' (2005 p.144) Indeed, in the episode "Q Who?", the Borg's first onscreen appearance, they demonstrate their technological superiority time and again: the Borg scouts teleport through the Enterprise's shields [20:54], the second scout develops a shield against "Worf's" phaser fire [23:31]; the Borg's tractor beam both ensnares the Enterprise and drains its shields [26:28]; the Borg ship can regenerate [36:22]; is immune to photon torpedo fire [37:46] can outrun the Enterprise at maximum warp [37:58]; and drain the Enterprise's warp engines. [39:52]

In addition, the Borg never seems to attack the Enterprise; instead they simply wish to entrap it for the purpose of utility and assimilation. The implication is that if the Borg had found nothing of value in the Enterprise they would have easily destroyed it and its crew. In fact the only escape from the Borg seems to be recourse to *deus ex machina*; that is, rescue can only be attained via Q's intervention. The Borg even has the temerity, unlike Data and Q, to accept its superiority and displays little desire to become human. This said, such

impertinence is unsustainable, for it is simply too tasteless, even for *Star Trek* villains – "Seven of Nine" in *Star Trek: Voyager* demonstrating that even the mighty Borg (as individuals) aspire to become human.

Whilst *Star Trek* portrays the human as the pinnacle of evolution, it is willing to admit that there "may" be some advantages to becoming an interconnected collective. This said it is interesting to note that the advantages highlighted by the Enterprise's crew seem somewhat peripheral. "Troi" states: 'We're not dealing with an individual mind. They don't have a single leader. It's the collective minds of all of them… a single leader can make mistakes, which is less likely in the combined whole.' [25.49] While Riker believes 'Speed being the most obvious [advantage]. This ship literally just thinks what it wants and then it happens.' [33:36] However a far more obvious disadvantage of being a group of individual organisms is surely the inability to transmit knowledge effectively, especially over time. As Fuller notes:

> 'The challenge of communicating ideas across age groups will remain even after enlightened polities have equitably redistributed incomes, blurred sexual identities and mixed races. This is simply because there is no clever way of redistributing, blurring or mixing attitudes that are primarily the result of temporal differences – that people live when they do in history. (2005 p.157)

Indeed becoming a collective might be the clever solution to this age old problem: 'At present, human intelligence is limited by the knowledge that can be acquired and mastered in one's lifetime. We have no mechanisms for instantaneously tapping into the collective wisdom of the human race as in the case of Borgs in Star Trek!' (Reddy 2000) Some even see this process as the next evolutionary leap for mankind:

> 'As mentioned earlier, the creation of multicellular organisms can be viewed as an evolutionary leap. The same might be said about the integration of human and machine to create a wholly interconnected "organism", composed of multitudes of individuals. It will be an immense leap for humanity, or for what it becomes. This idea has been put forward by scientists and by writers of science fiction. It may be seen as good ("enlightenment through computers") or bad (will we become the Borg?) – the end of humanity as we know it, a utopia, or both.' (Belkin 2001)

There is of course another advantage with connecting man and machine, and that is the prospect of transcending the mortal flesh. However in *Star Trek* it is the humans, rather than the Borg, who excel in such matters. In the true spirit of Christian Puritanism – chapter seven, verses 22 to 25 of the Epistle of Paul the Apostle to the Romans, reads:

> 'For I delight in the law of God after the inward man: But I see another law in my members, warring against the law of my mind, and bringing me into captivity to the law of sin which is in my members. O wretched man that I am! who shall deliver me from the body of this death? I thank God through Jesus Christ our Lord. So then with the mind I myself serve the law of God; but with the flesh the law of sin.'
>
> (KJV 1611/1997 NT p.196)

In *Star Trek: The Next Generation* it is twenty-fourth century humanity that appears to be on the very cusp of expurgating all influences of the flesh. In marked contrast with its first incarnation, lust, gluttony, greed, sloth, wrath, envy, and pride all seem in short supply aboard Picard's Enterprise. Indeed this is nowhere more obvious than in the differing representations of the Enterprise's two captains. However while the humans of *The Next Generation* are cleansing the flesh of its carnal desires to facilitate the spiritual transcendence of the soul and its heavenly immortality, the Borg are physically abandoning the flesh to release the mind from its biological constraints and thereby attaining material immortality.

In representing this striving to transcend the mortal flesh, *Star Trek* illustrates the parallels between Christian salvation and the posthuman narrative, as Dinello notes: 'Like their Christian predecessors, the prophets of posthumanity believe humans possess an immortal soul that they call the mind. Technologists hate the body. They want to liberate the immortal mind and transcend the flesh.' (2005

p.24) Posthuman technophile Ray Kurweil believes evolution on Earth can be divided into six epochs, the fifth being the Borg-like merger of human technology with human intelligence:

> 'Looking ahead several decades, the Singularity will begin with the fifth epoch. It will result from a merger of the vast knowledge embedded in our own brains with the vastly greater capacity, speed, and knowledge-sharing ability of our technology…. The Singularity will allow us to overcome age-old human problems and vastly amplify creativity. We will preserve and enhance the intelligence that evolution has bestowed on us while overcoming the profound limitations of biological evolution.' (2005 pp.20-21)

Why the Borg has not been portrayed as having reached the sixth epoch, which to a large extent demarcates the full transcendence of the body, may be due to the accessibility of the narrative and the esoteric nature of representing human minds as separate from human bodies. As Sandberg (2003) notes: 'Regardless of people's reactions to them, borganisms are one of the best explored forms of posthumanity. Unlike Jupiter brains or uploaded entities, we can at least have an inkling of what they are and how they can be brought about; there is no immense discontinuity between current humanity and borganisms.' This said, the fact that the Borg are portrayed as less advanced at casting-off the physical limitations of the body than their human counterparts are at spiritually transcending its base impulses, also functions a proclamation expounding the unnecessary nature of the

posthuman; that mortality is banished through spiritual devotion rather than mechanical bastardisation. However this message is lost on the secular humanist, for him: 'Technologism, replaces Christianity, becomes the sole vessel through which humanity accesses the divine and enters heaven.' (Dinello 2005 p.31)

Liberal Eugenics and Social Selection

Film: *GATTACA* (1997)

GATTACA is set in 'THE NOT - TOO - DISTANT FUTURE' [4:21], where social class is determined by liberal eugenic selection. "Vincent Freeman" is an astronaut for the Gattaca Aerospace Corporation, an organisation that only employs those of the very finest genetic quality.

Vincent is, however, unlike his fellow colleagues, for he is not a product of eugenics. He is a charlatan, a "borrowed ladder" [33.36], a person with an "inferior" genetic identity who has procured a different genetic profile and is fraudulently portraying it as his own. This process is usually conducted for social

advancement, but in Vincent's case, it is to achieve a childhood ambition beyond his genetic heart condition.

Vincent has assumed the identity of "Jerome Eugene Morrow", a former competitive swimmer, who had become a paraplegic as a result of an implied suicide attempt. Their agreement is simple, while Jerome supplies Vincent with a new identity, Vincent pays the rent and keeps Jerome in the style to which he has become accustomed.

In an effort to secure the job at Gattaca, and bypass their routine staff screenings, Vincent goes through the daily rigmarole of disposing of: 'as much loose skin, fingernails and hair as possible.... At the same time Eugene prepared samples of his own superior body matter so that I [Vincent] might pass for him. Customised urine pouches for the frequent substance tests, fingertip blood sachets of security checks, and vials filled with other traces.' [32:27] Vincent also needs to dress and style his appearance to match that of Jerome; and has to undergo a painful operation and traction in an attempt to gain the extra two inches needed to make himself the same height as Jerome.

Having successfully passed the genetic test interview, Vincent, in the guise of Jerome, manages to evade detection sufficiently well, and rises quickly though the ranks of Gattaca. He is only one week away from his goal, a mission to Titan, when a Gattaca Mission Director is murdered at work and an "invalid's" DNA (that of Vincent) is found during a police sweep of the crime scene. The police quickly surmise that the invalid is the most likely perpetrator of the murder and instigate their own genetic testing of the Gattaca staff in an attempt to find a genetic impostor. Now Vincent must evade an ever-escalating number of identity checks until his launch date.

Moments before Vincent's seemingly inevitable capture, the police stumble on further evidence, an unaccounted specimen, which points to a member of the Gattaca staff a "Director Josef" as the murderer. A confession having been quickly obtained, Vincent is now free from suspicion. Nevertheless he decides to confront the head investigator, in the belief that although the police have found the murderer, the search for the invalid will continue. Indeed, there is the tacit implication

that Vincent has correctly determined that the head investigator is his estranged brother "Anton Freeman".

Anton, a product of eugenic selection, now threatens to arrest Vincent if he does not relinquish his fraudulent identity. This is portrayed as Anton imposing his "legitimate" superior genetic status on Vincent in an attempt to quell his social inferiority at Vincent's success at both impersonating Jerome and becoming an astronaut. Anton's insecurities then compel him to challenge Vincent to replay their childhood swimming game of chicken, a competition Anton has only lost once.

Having taken-up his brother's challenge, Vincent out-swims his brother for the second time. Realising his defeat Anton asks: 'How are you doing this Vincent, how have you done any of this?' [92:30] at which point Vincent replies: 'This is how I did it Anton; I never saved anything for the swim back.' [92:48]

Vincent's launch date arrives, but as he moves towards the spacecraft the crew is subjected to an unexpected substance test. Unfortunately Vincent is not carrying

any of Jerome's urine and as a result fails the test. At this point the doctor implies he has known of Vincent's deception from the very outset of his training, but empathising with his position, he then falsifies the results and allows Vincent to make his flight.

In 1865 English polymath Francis Galton argued in "Hereditary Talent and Character", a two-part article for *Macmillan's Magazine*, that: 'It would seem as though the physical structure of future generations was almost as plastic as clay, under the control of the breeder's will. It is my desire to show more pointedly than – so far as I am aware – has been attempted before, that mental qualities are equally under control.' (p.157)

It would not be until 1883 that Galton, cousin of Charles Darwin, coined the term "eugenics" (Kevles 1999 p.xiii) to describe his theory of what, at this early stage, was little more than human selective breeding. However, by the early twentieth century biological scientists like Julian Huxley were contemplating a type of eugenic selection far beyond Galton's original conception:

'There is only one immediate thing to be done – to ensure that mental defectives shall not have children.... The next step, could it only be achieved, would be to discover how to diagnose the carriers of

> defects.... There is, of course, a still further question: how the original defective genes which are responsible for inherited mental defect were produced in the first place.' (1931 pp.98-99)

The only stage missing from Huxley's deliberations and the technology of the present day is his failure to visualise a time when man will have not only sufficient knowledge to understand the origins of these genetic "defects", but also the in vitro selection and manipulation technology perceived necessary to "solve" such problems. This either, at the hereditary lineage level with "gene therapy", which attempts to 'eliminate the expression of a wayward gene and replace it with a normal one', or at the individual level with "anti-gene therapy", which utilises: 'transgenes that act to nullify the action of other specific genes.' (Silver 1999 pp.272-273)

As one would expect, the fin-de-millennium genetic technology described by Silver does not, yet, match that of its contemporary science fiction narratives. However, while the film *GATTACA* presents a society with a refined and systematic form of eugenics, far in advance of anything the present has to offer; the range of technology used is far from representative of the full gamut of contemporary genetic technology. In fact the technology shown in *GATTACA* seems limited to the section and manipulation of *only* the would-be parent's genetic material; as the geneticist in the film states: 'And keep in mind, this child is still you, simply the best of you. You could conceive naturally a thousand times and never get such a result.' [12:23] The implication here seems to be that

Vincent's brother Anton will be nothing more than a hyper-refined product of Marie and Antonio Freeman genetic material i.e., that no "foreign" genetic material will be used.

This anomaly creates a terminology issue. For while most posthuman commentators appear to prefer the term "reprogenetics" rather than "liberal eugenics" when describing genetic reproductive technology (opponents argue this is simply an attempt to distance it from eugenics less than auspicious history), it should be noted that the procedures used in *GATTACA* appear to fall short of reprogenetics.

Reprogenetics is a contemporary term, coined by Silver (Lemonick 1999 p.66), it refers to: 'the incredible power that emerges when current technologies in reproductive biology and genetics are brought together' (Silver 1999 p.9), and clearly includes utilising transgenic and synthetic, genetic techniques among others. Liberal eugenics, on the other hand, can be seen as merely an adaptation of the term eugenics, used to distinguish the social section process. The difference is that whilst historical eugenics utilises coercive methods and totalitarian enforcement to enact the concepts of "positive" eugenics: 'which aimed to foster more prolific breeding among the socially meritorious' and "negative" eugenics: 'which intended to encourage the socially disadvantages to breed less – or not at all' (Kevles 1999 p.85); liberal eugenics relies on parental choice and genetic manipulation, to achieve the same aims i.e., the minimisation of congenital disorder and the enhancement of ability. This said Paul illustrates that whether the

liberal eugenics is free from coercion appears to be a matter of ideological standpoint:

> 'it is no simple matter to determine whether a policy is coercive, and indeed there is no value-neutral way to decide. Coercion has different meanings in different political traditions; to classical liberals and contemporary (libertarian) conservatives, a decision is voluntary if there are no formal, legal barriers to choice. To liberals in the tradition of T.H. Green, or to socialists, coercion is not simply a matter of removing legal barriers: we are free to choose only when we have the practical ability to agree or refuse to do something. Thus in the former tradition, the potential parents of a Down-syndrome child are free to abort the foetus or bring it to term. In the latter, they are not, since the "downstream" costs of caring for a severely handicapped child are enormous.' (1992 pp.669-670)

The issue here is that the transgenic and synthetic, genetic technologies of reprogenetics contain the *potential* to create not just a "better" human, but a new species; whereas the technologies utilised by the geneticists in *GATTACA* clearly do not. It therefore seems more appropriate to use the term liberal eugenics, rather than reprogenetic, when describing the genetic technology portrayed in the film.

Posthuman advocate James Hughes openly admits that *GATTACA*'s 'dystopian depiction of genetic discrimination is now widely cited as one of the convincing

proofs that germinal choice is a bad idea.' (2004 p.146) Nevertheless, while he may believe that the public's opinion of the society portrayed in the film is near universally damning; *GATTACA* appears to be a reasonably objective portrayal of the liberal eugenic ideal.

This is of course with the exception of the film's overt sentimentality, an example being its portrayal of employment selection, and the seemingly unfair and distasteful idea that Vincent is excluded from his ambition to become an astronaut solely because of his genetic identity. As Wood writes:

> 'Vincent is, of course, more than his genetic printout would suggest. His possession of the "will" to get into Gattaca Corporation, to become one of the elite.... Vincent's strength of mind and purpose overcome the weaknesses of his body, as he ignores his high probability of heart failure, makes up for his lack of a good education and pushes himself to achieve.' (2002 p.170)

However such selection procedures exist today and this is hardly a cogent example of unfair discrimination. Indeed while Vincent's voiceover questions: 'why should anybody invest all that money to train me, when there are a thousand other applicants with a far cleaner profile? Of course, it's illegal to discriminate "genoism" it's called – but no one takes the laws seriously' [15:53], if someone with an analogous heart disorder attempted to become an astronaut tomorrow, they would similarly fail the first batch of medical/physiological assessments.

Having done so, the applicant would also be disqualified from employment, irrespective of effort or dedication. It should be noted here that Vincent's use of Jerome's recorded heartbeat [44.18], his reaction when the recording ends [47:30], and his subsequent exhaustion after the treadmill workout, all imply Vincent *has* a cardiovascular dysfunction rather than only the theoretical possibility of developing one. However even if the narrative is given a sympathetic reading, one that implies Vincent needs to conceal the relative inadequacies of a non-engineered heart, rather than actual damage, the analogy still holds. It would still be a contemporary example of acceptable disqualification from employment based on heredity. The issue here seems to be the escalating cultural delusion and oversimplification surrounding the notions of "meritocracy" and "discrimination". For there is now a widely held, and seemingly unquestioned, belief that an individual can, or at least *should* be able to, achieve anything with hard work and perseverance; this immaterial of aptitude, whether psychological or physiological. In addition there is the assumption that the rejection of discrimination equates to the rejection of differentiation, rather than the rejection of *unfair* differentiation. Ironically if this fanciful social narrative becomes a potent social maxim, then the most effective method of expurgating differentiation is by developing the biotechnology capable of producing genetically identical humans.

Taking a step back, an argument can be made that it is an advantage to know one's physiological, and possibly even psychological, limitations early in life, so one does not pursue pointless goals; and again this already happens, although at a much cruder level. A child born to parents who are both over six feet tall will

hopefully realise and accept, reasonably early in life, that a burning ambition to become a jockey or coxswain is probably something best forgotten. That is even if the cultural narrative states one should live the dream.

Jürgen Habermas believes individuals who undergo genetic engineering, analogous to that in *GATTACA*, will 'remain blindly dependent on the nonrevisable decision of another person, without any opportunity to establish the symmetrical responsibility required if one is to enter into a retroactive ethical self-reflection as a process among peers. For this poor soul there are only two alternatives, fatalism and resentment.' (2003 p.14) Fatalism due to the illusion that technological manipulation has undermined his autonomous potential, and resentment because he has been used as a means to his designer's ends, which Habermas believes is in direct contravention of Kant's categorical imperative. (2003 p.55) However the fatalism Habermas refers to, has little, or nothing, to do with biotechnology *per se*. For the depression he refers to, appears unlikely to arise from simply knowing *that* you have been genetically engineered, but rather from knowing *what* you have been genetically engineered to become. That is, knowing your future genetic predispositions and feeling you cannot avoid them even if you tried. Yet these predispositions are *not* contingent on being subjected to genetic engineering, they are applicable to everyone. The irony here is even if there was a universal moratorium on human biotechnology, inevitably a simple genetic test will be developed that, if conducted at birth, would highlight the future predispositions of a person who has *not* undergone genetic engineering in an analogous manner to if they had. Indeed Vincent undergoes such a test in

GATTACA: 'Now only seconds old, the exact time and cause of my death was already known' [9:38] and this information forms the basis of his fight against genetic discrimination. However Vincent has *not* undergone genetic selection and yet he is no freer from the depressing effects of knowing his genetic predisposition than his genetically engineered brother Anton.

Moreover, Habermas' implication that human biotechnology *necessarily* contravenes the categorical imperative is also somewhat questionable. Kant's humanity formulation of the categorical imperative states: '*Act in such a way that you treat humanity, whether in your own person or in any other person, always at the same time as an end, never merely as a means.*' (1785/2002 §32 429 p.230) However the operative word here is "merely", as Johnson (2004) notes: 'the Humanity formula does not rule out using people as means to our ends. Clearly this would be an absurd demand, since we do this all the time.... What the Humanity formula rules out is engaging in this pervasive use of Humanity in such a way that we treat it as a *mere* [original emphasis] means to our ends.'

A seemingly straightforward biotechnological example of using someone as merely a means to an ends would be the cloning of a human for transplant organs. An extreme example of this would be to treat a human clone in an analogous fashion to a xenotransplant animal. That is to "grow" the human in laboratory conditions, with little or no regard of the clone's interests, beyond the healthy development of the organs for harvesting, and then at the most medically advantageous moment, slaughtering the human for its organs.

In a more prosaic form, the breeding of humans for their potential utility has already begun. There is legalisation, in the UK, that allows parents to select and manipulate embryos facilitating the creation of a child with specific characteristics enabling it to be a donor for, say, an already existent sibling. Whilst the idea of donor children being harvested for their organs is, at present, inconceivable, a more plausible example will be children designed to be tissue or bone-marrow donors; and examples, or attempted examples, of this already exist. (BBC 2005)

Although there may be a social fantasy that having a child is, or at least can be, an act of altruism on behalf of the parents, it is little more than an act of egoism. Having a (planned) child is a means to an ends, immaterial of gene manipulation. However while the intention behind designer siblings may appear comparable with that of the cloned organ donor example, this may not be the case. It is clearly possible for the would-be parents to have always intended on having another child anyway. There does seem to be a substantive difference between using biotechnology because it is available, and using it because it is contingent. That is, there is a difference between the perspectives: given the choice I would like my next child to be a donor child; and: I will only have another child *if* it is a donor child. The latter is an example of having a child *merely* as a means to an ends, and thus a contravention of the categorical imperative, whilst the former is not.

This position becomes more complicated if the parents of an ill child decide *not* to have further children, *because* the earlier child's illness is too demanding.

However, if said child not ill, or could be cured by having a donor child, then they would want further children. The double-contingency of this situation creates an *ex post facto* parallax in which the donor child will be seen as either a desired addition to the family, or an added burden, dependent on the success, or failure, of the genetic engineering and treatment. Assuming the categorical imperative is a measure of intention, rather than outcome, its non-contravention, in this example, can be achieved simply by sidestepping the notion of gambling with the perceived "worth" of the donor child i.e., by holding a deluded faith in the absolute efficacy of the technology and treatment.

Nevertheless the conclusion that there is a substantive difference between using biotechnology because it is available, and using it because it is contingent (and that this difference is whether it contravenes the categorical imperative, or not) appears to hold with both donor and non-donor genetically manipulated children. If this is the case, then within societies where human biotechnology is socially accepted, routine and endemic, like that in *GATTACA*, the contingency of the procedure will, in most part, no longer be part of the parental decision making process, for its availability will be assumed. The upshot is, contrary to Habermas, that most parents will be extricated from the ability to intend to have a child merely as a means to an ends.

On a symbolic level, it may be argued that the actions and success of Vincent's duplicity in *GATTACA* demonstrates the "human spirit" can triumph over adversity and personal limitations, and thus should be allowed to push in

directions it may be perceived it should not. Of course, the reality of the situation is that Vincent's selfish duplicity undermines the safety of the mission and all of its crew. In addition, if someone died as a result of Vincent's deceit, it would not only be culturally acceptable to seek punitive action against Vincent, but also to seek reparations from the Gattaca Aerospace Corporation for the inadequacy of their applicant screening process. Indeed, although Western societies like the *idea* of the spirit running wild, in reality, they try to keep it tightly boxed.

From the perspective of pragmatics, Vincent's self-exile is an important fact in his future deception. It is also emblematic of his wish to distance himself from his genetic inheritance. However, even when separated from his family, Vincent still belongs 'to a new underclass no longer determined by social status or the colour of your skin. No. We now have discrimination down to a science.' [19:00] The use of language here is important because the narrative implies equivalence, by association, between Vincent's situation and contemporary discrimination. Yet while Vincent is forever "condemned" to his underclass status – even when in the guise of Jerome – it can be argued that the real social success of *GATTACA* lies with his brother Anton; for it is he, rather than Vincent, who gets set free from his heredity. Clearly the potency of this viewpoint seems contingent on the perceived scope and dynamics of genetic inheritance. In an extreme form, it is believed that genetic make-up is fundamental to all aspects of the individual. Heredity is therefore perceived as the crux of all social inclusion and exclusion, whether culturally acceptable or not. When referring to the screened "pre-embryos" the geneticist states: 'I've taken the liberty of eradicating any potentially prejudicial

conditions: premature baldness, myopia, alcoholism and addictive susceptibility, propensity for violence and obesity, etc.' [11:55] The inference here is clear, in the world of *GATTACA* these conditions are deemed hereditary. Now if this is true outside the world of celluloid, and the likely transmission of such propensities is neither equal nor universal, then the probability of social success can be influenced by mate selection. Indeed if certain types of individual are mutually attracted, then it is possible for social selection to create and inflict a disproportional social hindrance on specific individuals and their progeny. However, from this standpoint it appears that only reproductive technologies offer those disproportionally disadvantaged a genuine opportunity at equality. That is the ability to break from the social constraints resulting from heredity and unfettered social selective breeding:

'In a society where the premium for successful and well-paid work is intelligence, people are increasingly getting the kinds of jobs for which they are mentally cut out. The intelligentsia of whatever class is being selected (and through interbreeding is selecting itself) to become a cognitive elite – in, for example, the upper echelons of management or education. At the same time, however and as a reciprocal to the emergence of the cognitive elite, there is said to be an ever-increasing underclass. This is composed of much faster-breeding people with lower IQ levels.' (Dickens 2000 p.65)

Indeed advocates of liberal eugenics will argue that if one takes into consideration the apparent failures of the 1960's liberal, social consensus education system and its programmes for the socially disadvantaged, genetic selection will not only be more effective than current social selective breeding, but it would also be more egalitarian. That is, liberal eugenics will enable the enhancement of the underclass to a level comparable with that of the social elite, thus establishing genetic parity and save the "genetically disadvantaged" from wholesale societal-exclusion and incurable mental decay. Fernández-Armesto notes:

> 'Broadly speaking it is a left/right conflict, with supporters of social radicalism ranged against those reluctant to make things worse by ill-considered attempts at improvement. The controversy crystallised in the late 1960s in the rival reports of Arthur Jensen at Berkeley who claimed that 80 per cent of IQ is inherited (and, incidentally, that blacks are genetically inferior to whites) and Christopher Jencks and others at Harvard who also used IQ statistics to argues the opposite case.' (2005 p.162)

Nevertheless, having stated it is reproductive biotechnology that holds the key to *true* equality, many advocates of posthuman technologies will argue that once it has been established that there are certain human characteristics worth maximising (such as intelligence) and one advocates enhancement for the disenfranchised, then advocating universal enhancement naturally follows.

However this conclusion appears to be self-undermining, for if everyone was enhanced relative to their position, then the social dichotomy would remain.

While this scenario seems unlikely, a more plausible possibility is that of an inequality through market forces. That a social dichotomy will be preserved, or may be even enhanced, by the availability of biotechnology being contingent on financial capacity. If this were to happen then the financially well-off would deploy their fiscal means to ensure that *their* children, above all others, had the best opportunities. Wright warns:

> 'Biologists and ethicists have by now expended thousands of words warning about slippery eugenic slopes, reflecting on Nazi Germany and warning that a government quest for a super race could begin anew if we're not vigilant. But the more likely danger is roughly the opposite; it isn't that the government will get involved in reproductive choices, but that it won't. It is when left to the free market that the fruits of genome research are most assuredly rotten.' (Wright 1990 p.27)

Indeed in what is sometimes called the "*GATTACA* argument", both critics and advocates argue that liberal eugenics in the hands of the consumer would, in all probability, 'benefit the rich far more than the poor. That they would take the gap in power, wealth, and education that currently divides both our society and the world at large, and write that division into our very biology.' (McKibben 2004

p.38) Even biotechnologists like Silver accept: 'The isolation of the poor could become even more pronounced as well-off parents provide their children not only with the best education money will buy, and the best over-all environment that money will buy, but the "best cumulative set of genes" as well.' (1999 pp.263-264)

There appears to be three stock responses to this predicament. Firstly, the belief that such inequality will become endemic, as those with genetic power will have little incentive to share their advantage. Some will consider this sufficient justification for the prohibition of liberal eugenics, especially when it is also believed nigh impossible to reject such technology once it has commenced. As McKibben argues: 'Once the game is under way, in other words, there won't be moral decisions, only strategic ones. If the technology is going to be stopped, it will have to happen now before it's quite begun.' (2004 p.36)

The second response is to believe that government control can enforce genetic equality, without impinging on the will of the individual, Hughes' position is: 'For the new transhuman era to fully empower people politically and technologically we need a democratic transhumanist movement fighting both for our right to control out bodies with technology, and for the democratic control, regulation and equitable distribution of those technologies.' (2004 p.xvi)

The third standpoint centres on worries concerning authoritarian governments imposing on the freedom of the individual. Reflecting confidence in the market,

Silver's more *laissez-faire* attitude argues: 'If it is within the rights of parents to spend $100,000 for an exclusive private school education, why is it not also within their rights to spend the same amount of money to make sure that a child inherits a particular set of their genes?' (1999 p.264)

Whilst future reproductive technology is likely to mirror the same social dichotomy and equitable distribution of services as contemporary societies, it is more than a little ironic that the final cut of "dystopian" *GATTACA* portrays a seemingly utopian environment where these issues have been solved. The film does not depict any overt race or gender discrimination, or the selective eradication of other distinguishing features. Indeed the black geneticist gives Vincent's parents a teasing look when he reads their character selections for Anton: 'Now you have specified hazel eyes, dark hair, *fair skin*.' [11:49] In addition, *GATTACA* depicts a society where there is no draconian government imposition on the individual to use gene technology and no economic constraints that hinder its equal distribution. For while Vincent is born without genetic manipulation, when his parents decide to have a second child, the option to use such technology seems openly available to them. If anything, the method of Vincent's conception, and thus his underclass status, seems to be contingent on the principles of the parents; although it can be further argued the nature of Anton's conception suggests these principles are a luxury his parents cannot really afford.

Nevertheless the decision, by Vincent's parents, to utilise reproductively manipulation when having a second child raises questions relating to whether there is a substantive difference between the selection methods of historical and liberal eugenics. Agar argues that:

> 'While old-fashioned authoritarian eugenicists sought to produce citizens out of a single centrally designed mould, the distinguishing mark of the new liberal eugenics is state neutrality. Access to information about the full range of genetic therapies will allow prospective parents to look to their own values in selecting improvements for future children. Authoritarian eugenicists would do away with ordinary procreative freedoms. Liberals instead propose radical extension of them.' (1999 p.171)

However, while the liberal eugenics portrayed in *GATTACA* appears to allow greater parental freedom and choice than the authoritarian and prescriptive eugenics of Huxley's day, this may be an illusion. In a telling section of voiceover, Vincent declares with bewilderment and possible exacerbation that: 'I'll never understand what possessed my mother to put her faith in God's hands rather than those of her local geneticists.' [09:23] It is certainly plausible for a child to feel resentment towards their parents for not imbuing them with the social advantages associated with reproductive technology. Indeed Vincent's inherited heart disorder appears to be the most likely factor behind his parent's decision that: 'Like most other parents of their day, they were determined that their next

child would be brought into the world in what has become the natural way.' [11:03] The "natural way" being with the use of genetic selection and manipulation.

Whilst initial social pressure to use genetic selection will likely fall only on those with known heredity illness, it seems inevitable that the coercion to consume will, eventually, encapsulate all aspects of would-be parenting. Silver believes: 'It is individuals and couples who want to reproduce themselves in their own images… who want their children to be happy and successful… *not governments* – who will seize control of these new technologies.' (1999 p.10)

Indeed rational choice theory, such as Hardin's *The Tragedy of the Commons* (1968), argues that rational beings will seek to maximise their own interests, even if this is at the detriment of the collective. This is because the gains made by the individual are wholly theirs; while the losses incurred are shared among the group. Applied to liberal eugenics this theory suggests that would-be parents, who believe genetic selection is advantageous to their prospective child, are acting rationally by participating in selection, even if they also believe such technology is detrimental to society.

'Indeed, in a society that values individual freedom above all else, it is hard to find any legitimate basis for restricting the use of reprogenetics. And therein lies the dilemma. For while each individual use of the technology can be viewed in the light of personal

> reproductive choice – with no ability to change society at large – together they could have dramatic, unintended, long-term consequences.' (Silver 1999 p.11)

In addition some advocates will argue, once the fundamental issue of safety has been addressed, the enormous therapeutic potential of gene selection will transform its social acceptability and make its use a moral imperative. Hughes cites Singer's "preventive principle": 'For any condition X, if it would be a form of child abuse for parents to inflict X on their child soon after birth, then it must, other things being equal, at least be permissible to take steps to prevent one's child having that condition.' (Singer 2003)

From this Hughes concludes: 'the parent who doesn't take reasonable, available steps to ensure that their future child has normal abilities is as morally culpable for their child's disabilities as the parent who causes those disabilities after birth.' (2004 p.147) It would seem, from Hughes' perspective, Vincent's parents' decision not to use gene selection for their first child, was both frivolous and negligent, and it is they who are not only biologically accountable for Vincent's underclass status, but morally responsible for it as well. Of course if Hughes' position became socially dominant, it would seem plausible to envisage a society where decisions on gene selection are viewed as *de facto* tests of parental fitness, thus adding to the social pressure to use.

While this standpoint may seem a little extreme to some in contemporary society, there are signs – for example the increasing use of prenatal testing – that it is gaining social approval, especially among would-be and actual parents to whom such decisions are not theoretical abstracts. In fact it would already seem quite unlikely to find parents who, having seen Vincent's predicament, would then admonish his parents for their actions regarding Anton's conception. Moreover if *GATTACA* had depicted Vincent's parents being told, prior to Vincent's conception, that conceiving a child would likely result in the transmission of heart disease or underclass status, many in contemporary society would condemn their decision *not* to use the genetic technology available. Indeed it should be noted that Vincent's character is depicted as sufficiently single-minded to reverse his parents' decision if the technology existed. That is, if there were sufficiently potent gene therapy to reverse his genetic status, Vincent would willingly supersede his parent's wishes and become a member of the "healthy" social elite, *post facto*.

If anything, *GATTACA*'s portrayal of parental decision-making surrounding gene selection becomes increasingly implausible the more it is examined. For as long as gene selection is seen as a method for helping would-be parents to ensure their progeny has the best chance of a healthy and successful life, then liberal democracies will embrace the technology with such self-righteous gusto that social coercion to consume becomes analogous to authoritarian enforcement.

As a result, and in keeping with other contemporary social issues, if there is social disquiet over liberal eugenics, it is most likely to originate from those *without* access, rather than from those with access. Indeed, if demands are made, it will not be that those with access should be refused access, but rather those without access should also have access.

Better Humans, Safer Machines?

Film: *RoboCop* (1987)

Married father of one "Alex Murphy" is a Detroit police officer who has just been transferred from the pleasant precinct of Metro South, to crime ridded Old Detroit, on behest of Omni Consumer Products (OCP) 'the firm which recently entered into a contract with the city to fund and run the Detroit Metro Police Department.' [2:13]

At the same time "Dick Jones" president of OCP is co-chairing a meeting in which he plans to unveil and demonstrate "ED-209". A 'self-sufficient law enforcement robot' [10:39] developed by "Security Concepts", a subsidiary of OCP, in an attempt to assist

the police with their struggle to reduce crime prior to the redevelopment of Old Detroit.

Unfortunately the demonstration of ED-209's "arrest and disarming procedure" results in the death of an OCP executive. However while Jones attempts to assure the CEO that this was simply a glitch, a temporary setback, executive "Bob Morton" makes him aware of the "RoboCop" programme he has developed, 'as a contingency against just this sort of thing.' [13:01]

Out on patrol, Murphy and his newly assigned partner "Lewis" respond to an "all units" call that "a 211" (an armed robbery) is in progress. After an initial armed confrontation with the criminals, Murphy and Lewis lose track of the getaway van, only to relocate it, now abandoned, at the old steel mill. Murphy and Lewis then enter the premises without back-up and are captured by the robbers. Nevertheless Lewis manages to escapes, but Murphy is mortally wounded and later dies in hospital.

Evidently given the green light to proceed with the RoboCop programme, Morton now presides over what appears to be the "cyborganisation" of the dead police

officer (Murphy), a process that in this instance involves a morbid discussion on whether to keep the remaining human arm. The point is resolved, and "total body prosthesis" determined, after Morton is reassured that the subject: 'signed the release forms when he joined the force. He's legally dead. We can do pretty much what we want to him.' [27:36]

In addition to its powerful armoured mechanical body, 'fastest reflexes modern technology has to offer, onboard computer assisted memory and a lifetime of on-the-street law enforcement programming' [28:57], the cyborg: "RoboCop" has also been programmed with four prime directives. The first being: Serve the public trust, the second: Protect the innocent, the third: Uphold the law, and a fourth which is classified.

Installed into service within the Old Detroit police precinct, RoboCop displays such superiority as a law enforcement officer that Security Concepts is 'projecting the end of crime in Old Detroit within forty days.' [42:01] However this prediction is brought into question after three events happen in quick succession. Firstly, RoboCop has a dream, in which he

recalls his death as Officer Murphy; something that is meant to be impossible, as his support team believe they have successfully erased his past memory. Secondly, Lewis challenges RoboCop to recognise himself as Murphy. Thirdly, whilst patrolling the streets, RoboCop happens upon a robbery in progress, the perpetrator of which he recognises as a member of the gang that killed Murphy.

Having now acknowledged his past life as Murphy, RoboCop becomes obsessed with apprehending his ultimate killer, gang leader: "Clarence Boddicker". In the meantime Jones, still smarting from the ED-209 debacle, has Boddicker kill Morton for usurping his influence over Security Concepts; but unfortunately for Jones, Boddicker "spills his guts" to RoboCop regarding this working relationship after being caught and arrested. Boddicker's testimony prompts RoboCop to arrest Jones at OCP headquarters, but is foiled by "Directive Four", which Jones explains is his 'little contribution to your psychological profile. Any attempt to arrest a senior officer of OCP results in shutdown.' [70:46]

Seemingly able to avoid total shutdown RoboCop flees the building, pursued initially by an ED-209, and then a large number of Police Officers who have been given the order, probably by Jones, to destroy RoboCop. Escaping to the old steel mill with Lewis, RoboCop is then hunted-down by Boddicker and his gang. Having eliminated their threat, RoboCop returns to OCP headquarters to give the executive board testimony regarding Jones' involvement in Morton's murder and explain the limitations of Directive Four. Jones' response is to retrieve a handgun and take the CEO hostage. However this action backfires when the quick-witted CEO dismisses Jones, thus releasing him from Directive Four association.

Having shot Jones repeatedly resulting in his unquestionable death, RoboCop is then thanked by the CEO and asked for his name, to which he replies: 'Murphy'. [97:03]

Hans Moravec believes that humans will rush headlong into the era of intelligent machines, in fact: 'we have very little choice, if our culture is to remain viable.' (1988 p.100) The reason for this seems to be a "slippery-slope" argument based

on the belief that technological development is inextricable from human evolution. Human societies and economies are, like biological organisms, subject to evolutionary pressures. Having developed and embraced increasingly efficient methods of production in an effort to gain advantage over their cultural competitors, mankind has become locked into a never-ending battle to stay one technological step ahead. If any nation had the temerity to halt unilaterally their technological evolution, the result for that nation would be to 'succumb either to the military might of unfriendly nations or to the economic success of its trading partners.' (1988 p.101)

Although not specifically framed as posthuman, this thinking permeates throughout the posthuman debate. Hughes uses the same – if we do not, they will – standpoint in an attempt to provoke lethargic democrats into supporting posthuman technologies. Arguing that 'democrats need to embrace transhuman enhancement is that it may be the only way to keep liberal and social democracies competitive with authoritarian regimes.' He goes on to clarify that: 'Of course I'm thinking of China.' (2005 p.200)

Whilst the vast majority of those who embrace the technological slippery-slope argument are unwilling to contemplate an alternate conclusion, believing the *universal* cessation of technological progress, or even its decline, is patently inconceivable, Moravec is at least willing to contemplate its most devastating and inescapable outcome:

> 'If, by some unlikely pace, the whole human race decided to eschew progress, the long-term result would be almost certain extinction. The universe is one random event after another. Sooner or later an unstoppable virus deadly to humans will evolve, or a major asteroid will collide with the earth, or the sun will explode, or we will be invaded from the stars, or a black hole will swallow the galaxy.' (1988 p.101)

This prediction seems a little bizarre, not in its content but rather the fact that it has been aired in the first place. For it is more than a little tenuous of Moravec to repudiate technological cessation based solely on unforeseen catastrophes and the long-term mortality of the human species, living on a dynamic Earth, orbiting a fading star. Scientists have, for decades, been estimating the lifespan of the sun, Hawking believes: 'Our star has probably got enough fuel for another five thousand million years or so' (1989 p.83), and there are many hypotheses regarding the ultimate fate of the universe. Yet very few ponder what humans will be doing at these points in time; assuming that they will either be extinct, or that it is rather meaningless to talk about such distant predictions. Indeed many argue that contemporary technoscience is an equally plausible threat to human extinction as deadly viruses, near earth object impact, or alien invasion.

Nevertheless the reason why the extinction argument is so potent to Moravec is because he seems to have transcended the view that human species will die out, or more precisely he believes humans are potentially immortal: 'By growing rapidly

enough, a culture has a finite chance of surviving forever... I will fantasize about schemes that would allow an entity to restructure itself so as to function indefinitely even as its universe ended.' (1988 p.101) Indeed Moravec truly believes that a posthuman entity, or "our successors" (1988 p.149) could become immortal.

'*RoboCop* conveys an intense awareness of our new "postmodern condition". It articulates the fear of a completely alienated, rationalized, mechanical world where human beings and their body parts are technologically processed, where emotions are lacking, where the ego is in ruins, where personal identity is absent, and where simulation approaches perfection. The fear in *RoboCop* is two-fold:

> that human beings will be replaced by machines (automation), and that human beings are becoming machines (alienation), spiritually and emotionally lifeless rationalists, technologically processed and simulated beings.' (Best 1987)

RoboCop is a socio-political satire, dystopian allegory of future technology and a utopian showcase for the posthuman. While the plot is interlaced with a damning social commentary on corruption and technological hubris, the main action appears to follow an idealised posthuman narrative, firstly by hyping anxiety towards automation, then countering this with posthuman alienation, and finally unmasks this alienation as exaggerated.

Borrowing from past science fiction narratives *RoboCop's* portrayal of automation is replete with failure. ED-209's arrest procedure "mishap" is not only an example of faulty hardware: 'It didn't hear the gun drop. He didn't hear it!' [12:33] but also of faulty software, of programming safeguards. Safeguard inadequacy is revisited in an apparent homage to the *WarGames* narrative and as a side crack at both the Strategic Defence Initiative and its, soon to be retiring, sponsor US President Reagan. Here "Media Break" reports on another automation failure: 'Ten thousand acres of wooded residential land were scorched in an instant when a laser canon aboard the Strategic Defence Peace Platform misfired today during routine start-up tests… it was a day of mourning for the families of 113 people known dead at this hour, among them, two former United States presidents who had retired in the Santa Barbara area.' [76:32] The issue of malevolent/benevolent usurpation of automaton control, highlighted in Asimov's "The Evitable Conflict", is played out when corrupt OCP President Dick Jones unleashes ED-209 on RoboCop after his failed arrest attempt: 'Maybe you'd like to meet a friend of mine?' [71:21] In addition, Murphy's transformation into RoboCop contains elements of pseudo-automation i.e., procedures that attempt to make him act like an automaton. For example when his memory is erased and when, in an obvious parody of Asimov's three laws of robotics, he is programmed with the four prime directives. Both of these procedures have limited success, with RoboCop having memory flashbacks and being able to circumvent certain elements of the prime directives. As Best argues: 'Throughout the film we see the human world trying to master nature but ultimately failing. Thus, the numerous

failures of ED-209, the power failure at the SDI space station and its subsequent misfires, the return of RoboCop's memory and former identity despite computerised programming, all signal the film's critique of technological reification as a flawless cybernetic control over the human life-world, albeit one already integrated with technology.' (1987)

After the OCP executive is gunned down by ED-209, Bob Morton describes the RoboCop programme as 'a contingency against just this sort of thing.' [13:01] One is left to ponder whether he simply means in case of failure in the primary project (ED-209), or whether it is a loaded comment implying the inevitable failure of such automation? This said it appears unlikely that he is referring to doubt regarding the value of technoscience, for both projects clearly deal with cutting-edge technology. Indeed *RoboCop* glorifies both technological failure and its success; this is nowhere more evident than in the portrayal of Murphy's death and RoboCop's "birth", as Wood states: 'conventional medical technology fails to save the severely injured Murphy.... This failure of conventional technology is counterpoised with the success of unconventional technologies, ones that have the capacity not only to keep the body of Murphy alive, but also to radically transform the notion of being alive.' (2002 p.164)

Whilst Murphy's death was clearly not one of old age, and it would normally be expected that *every* effort would be made in an attempt to preserve his life, somehow his reincarnation as the potentially immortal RoboCop seems to exceed this expectation. In fact, for many, the idea that man might harness posthuman

technologies to transcend death fills them with great apprehension, as McKibben writes:

> 'No generation of writers or thinkers has ever before faced the actual *possibility* of immortality. Always before, it's been a symbolic or religious or figurative prospect, not something to be accomplished with gene regulation or nanotechnology wizardry or silicon-flesh connections. There's been no time to let the idea gestate in our various cultures. But it fills me with the blackest foreboding. It would represent, finally, the ultimate and irrevocable divorce between ourselves and everything else.' (2004 p.165)

For many, this position seems counterintuitive, Broderick believes: 'Defeating death and planning rejuvenation are goals no more absurd than finding remedies for shortsightedness and asthma' (1999 p.201) The reasonableness of this position is grounded in a commonsense perception of the good life. Morbidity and mortality are patently reviled throughout the First World and vast financial resources are ubiquitously invested in the creation and sustenance of institutions specifically designed to reduce morbidity and, by association, increase longevity. The question of slowing, or reversing, this process, either by the stagnation or cessation of medical funding, seems palpably absurd; and many believe it is equally absurd to restrict medical progress by outlawing posthuman technologies.

Indeed, this latter proposition seems beyond many of those who vehemently oppose the posthuman. Fukuyama adopts the seemingly popular contradiction of attacking posthuman enhancement whilst accepting, even applauding, what can only be described as "posthuman therapy". While he accepts: 'The distinction between therapy and enhancement has been attacked on the grounds that there is no way to distinguish between the two in theory and therefore no way of discrimination in practice' (2002 p.209), his proposed solution seems to be little more than drawing subjective lines in windswept sand:

> 'One obvious way to draw lines is to distinguish between therapy and enhancement, directing research towards the former while putting restrictions on the latter. The original purpose of medicine is, after all, to heal the sick, not to turn healthy people into gods. We don't want star athletes to be hobbled by bad knees or torn ligaments, but we also don't want them to compete on the basis of who has taken the most steroids. This general principle would allow us to use biotechnologies to, for example, cure genetic diseases like Huntingdon's chorea or cystic fibrosis, but not to make our children more intelligent or taller.'
> (Fukuyama 2002 pp.208-209)

Nevertheless, whilst many in the First World will view the outlawing of certain posthuman technologies as counterintuitive, they will openly scorn those who suggest mortality is to be revered and embraced.

Kass (2004 pp.266-267) offers four reasons why he believes "our finitude" may be of benefit. Firstly, he doubts that the pleasure of life would increase proportionately to any life extension. Secondly, he doubts whether life can be serious or meaningful without the limit of mortality. Thirdly, he believes awareness of mortality, ours and others, is the key to understanding love and beauty. Fourthly, he believes mortality allows the moral excellence of being able to give or fight for one's life. In response to these sentiments, Aubrey de Grey writes:

> 'Possibly the most absurd argument opposing the effort to cure human aging is that to extend our lives indefinitely would be unnatural: would render us in some sense no longer human. The feature that, in my view, places this argument above all others in the absurdity stakes is the enormity of what it overlooks within its own scope. To stand back and (by one's inaction) cause someone to die soon, when one could act to let them live in good health for a lot longer at no (or even modest) cost to oneself or anyone else, is arguably the second most unnatural thing a human can do, second only (and by a very small margin) to causing someone's death by an explicit action. To ask humanity to accept the "naturalness" argument against life extension, and on that basis to delay the development of a cure for aging, is thus to ask it to transform itself into something as un-human as can be imagined.' (Grey 2004 p.1)

In contrast others argue both Kass and Grey's positions are little more than fanciful humanist nonsense. Fernández-Armesto notes: 'Our obsessive desire to prolong our lives seems odd when so many of them are empty or filled only with meretricious comforts or rewards.' (2005 p.156) For Fernández-Armesto, life can neither gain value nor meaning, from death, nor loses such things from immortality. This is because life simply has no value or meaning. Indeed, while political philosophers may argue that social stability is best served with self-oppression (one where the social imagination has reified the social contract into delusions of morality grounded in ideological, or religious, authority), to suggest it is unnatural to allow someone to die either by inaction or killing them, is to have completely lost sight of the human as animal, and morality as social construct. Death is neither to be spurned nor accepted, it is to be ignored. As John Gray argues:

'We think we differ from other animals because we can envision our deaths, when we know no more than they do about what death brings. Everything tells us that it means extinction, but we cannot begin to imagine what that means. The truth is, we do not fear the passing of time because we know death. We fear death because we resist passing time. If other animals do not fear death as we do, it is not because we know something they do not. It is because they are not burdened by time.' (2003 p.130)

These opinions are clearly academic to the baby food eating immortal RoboCop, as Wilson notes: 'the transformation of the dead, or almost-dead policeman, into a cyborg requires the elimination of most of his body other than his face and brain.... It is never made clear how much body Murphy retains, other than his brain which has been modified by the implantation of a programmable chip... but a metal shaft driven into the area above his heart does not harm him.' (1995 p.251)

Bostrom and Sandberg believe enhancing human cognition can be achieved via a number of methods, many of which are uncontroversial and have little to do with posthuman technologies:

> 'Education and training, as well as the use of external information processing devices, may be labelled as "conventional" means of enhancing cognition. They are often well established and culturally accepted. By contrast, methods of enhancing cognition through "unconventional" means, such as ones involving deliberately creating nootropic drugs, gene therapy, or neural implants, are nearly all to be regarded as experimental at the present time.' (2007 p.2)

Mirroring the *RoboCop* narrative, Warwick believes humans can be augmented by connecting 'extra memory or extra processing capabilities directly on to the brain, possibly in the form of silicon chips'. (1998 p.267) An obvious advantage of compatibility between brain and computer will be the ability to upload and

download digital information. However, while RoboCop displays the advantages of being able to upload information, specifically when he inputs data into the police computer [53:52], and relays Jones' testimony to the OCP executive [95:49]; little is made of any download capacity. Indeed it is possible for his "law enforcement" and "directives" programming to have been embedded in his source code rather than downloaded afterwards. Interestingly, it is *The Matrix* that contains the techno-enthusiasts most definitive demonstration of brain downloading. Here Neo looks towards a helicopter and asks Trinity 'Can you fly that thing?' Her answer is 'Not yet.' [102:52] Seconds later, having asked Tank to upload the pilots programme into her brain, she can fly it without having undergone the rigmarole of months, if not years, of flight school.

In response to this some will undoubtedly argue that present day humans fail to utilise the full extent of the brain; and if anything human society is moving into an era where the brain is needed even less. In First-World societies, the ability to access information is becoming more important than the information itself. The irony with *The Matrix* example is that 'as computer technology evolves, the air force seems more likely to eliminate than enhance pilots.' (Stock 2002 p.24) Indeed, ever increasing automation seems more likely to result in the complete elimination of the human user. Soon transportation, as with many other devices, may lose all manual controls, at which point only computers will need to know how they are utilised.

As RoboCop is unveiled, Morton announces: 'We get the best of both worlds. The fastest reflexes modern technology has to offer, onboard computer assisted memory and a lifetime of on-the-street law enforcement programming.' [28:55] The implication here seems to be that RoboCop has some fundamental advantage that separates him from the competition, assumedly ED-209. However Morton's list only contains attributions that are patently within the scope of an intelligent robot, including the ability to upload and download information. It must therefore be assumed that the audience has missed the part where Morton explains the benefits of RoboCop's clearly definable human element.

The advantage of developing a *posthuman* rather than a robot law enforcement officer is questioned further with the terse and dispassionate manner in which RoboCop interacts with an assault victim, stating clinically: 'Madam, you have suffered an emotional shock, I will notify a rape crisis centre.' [37:40] However as the narrative develops the benefits of placing a human inside the machine becomes increasingly apparent, although some are possibly unintended.

One presumable benefit of being posthuman is RoboCop's ability to understand directives that, unlike Asimov's laws, contain a level of abstraction. Such flexibility is superior not only to the technological sophistication of the timeframe, it is certainly in advance of ED-209, but possibly beyond some contemporary humans. The result of this is that while RoboCop follows the standard pattern of safeguard deviation and reinterpretation shown in many science fiction automatons, his human dimension acts as a safeguard *par excellence*. At no point

do questions arise regarding whether RoboCop understands his orders, can be reasoned with, or is dangerously out of control. On the two occasions RoboCop seems to transcend the directives: firstly when he does not completely shutdown after attempting to arrest Jones, even though Jones specifically states: 'Any attempt to arrest a senior officer of OCP results in shutdown' [70:50]; and secondly his intentions to *murder* Boddicker: 'I'm not arresting you anymore' [92:06]; these do not seem errors in programming, but rather reassuring human influences. Even the idea of shooting Boddicker can be viewed from a position of empathy and understanding rather than of horror at technology run amuck. Indeed by seemingly venting his anger and frustration at the futility of arresting a recidivist murderer, with connections that allow him to circumvent the law, RoboCop's actions are akin to the: "taking the law into his own hands" of *Dirty Harry* (1971) Callahan, rather than rampaging ED-209. This view is of course compounded when RoboCop makes such quips as 'Your move, creep' [37:23] the term "creep" conspicuously lacking the pejorative impact of "punk".

While it can be argued that placing man inside the machine may be seen as the ultimate safeguard against increasingly intelligent technology, RoboCop's unique position highlights an obvious danger. Warwick and several of his students believe "*the* big issue" surrounding posthuman technology is: 'If cyborgs are created with superhuman capabilities from a normal human start point then it certainly brings about a threat to humanity itself.... After all, when cyborgs exhibiting an intelligence that far surpasses that of humans are brought about, it

will surely be the cyborgs themselves that make any decisions about how they treat humans.' (2002 p.239)

At this point the human element of a posthuman may become a liability, as humans are all too susceptible to corruption by power. Indeed, if there were only a few prototype posthumans, ontologically different from the general populous, it may be possible for them to run amuck. A by-product of *RoboCop*'s socio-political satire is the representation of many characters that are far less wholesome than the idealised Murphy. The single-minded, self-serving, back-stabling of corporate, and gangster, politics highlights a number of inherent flaws in such technology having a human element. However in a seemingly throw-away comment regarding the potential threat posthumans might pose to humans, Warwick ponders that: 'Perhaps the development of direct, military-style cyborgs might be possible to avoid.' (2002 p.239) Unfortunately this sentiment seems wholly disconnected from the realities of modern warfare, as Gray argues:

> 'In the postmodern military, cybernetics is the dominant metaphor, computers the most important force multiplier, and the cyborg man-machine weapons system the ideal. The military expends vast resources to transform solders into cyborgs. Already human-machine interfaces have improved incredibly, and now information is displayed on windshields, visors, or even directly into the eyes of weapons operators. The field of virtual reality came out of this research. There are also projects studying psychopharmological

modifications that reprogram soldiers so they can fight without fear in the hyperlethal battle space of postmodern war. Other research seeks to develop direct mind-computer communications for infantrymen wearing exoskeletons, as well as for tank drivers, submarine steersmen, and aircraft pilots.' (2002 p.58)

Warwick's comments also clearly fail to acknowledge Moravec's argument that the main driving force behind posthuman development will be competition with other nations. While there may be scientific interest, medical advantage, and economic gain to be had from pioneering such technologies, nation state paranoia has tended to focus initial questions regarding the best utilisation of new technoscience on the military. In this sense, the posthuman may, contrary to Warwick's beliefs, constitute a similar threat to the humanity as intelligent machines.

Of course, there are those who believe posthumans like RoboCop will never exist. Stock argues that: 'Such techno-exuberance, though an increasing influence on our culture, is far-fetched. Our flesh is a dense three-dimensional matrix of biological cells, ill suited for a permanent, working union with broad arrays of sensitive electronic probes.' (2002 p.21) He also believes:

'The problem with Ray Kurzweil's vision goes much deeper than mere technical feasibility. Even if in thirty years from now, as he predicts, we could buy machines with the computational power of a

thousand human brains for $1,000, program it effectively, and somehow shunt it into our brains, why would we? So steeped are we in the culture of artificial intelligence and special effects that at first this sounds like a ludicrous question. Such an amazing augmentation surely would transform us mere morals into cyber-demigods. Yet when I try to think of what I might gain by having a working link between my brain and a supercomputer, I am stymied if I insist on two criteria: that the benefits could not be as easily achieved through some other, non-invasive procedure, and that the benefits must be worth the discomforts of brain surgery. As I see it, an actual brain-computer link would bring us almost nothing that our sense – fed by tiny external devices such as miniature speakers to whisper in our ears and fibre-optic eyeglass projectors to throw images onto our retinas – could not.' (Stock 2002 p.23)

Similarly Mazlish believes man's next step will be 'the coming into being, at the hands of humans, of a new type of species, the thinking machine.' (1993 p.223) For Mazlish the flesh is an obvious boundary to the posthuman and therefore believes the future lays rather in the creation of intelligent computers and their implantation into robotic bodies, creating the "combot", the computer robot. (1993 p.224) Mazlish continues: 'There seem to be no bounds, in principle, to the expansion of intelligence in such machines. They seem prepared to take off from the limits reached by the human brain.' (1993 p.225) Unlike Warwick, Mazlish appears unthreatened by such machines: 'However the combot develops, I do not

believe that it will replace humans. Like other species, it will become one that coexists alongside them, in symbiotic relation.' (1993 p.232)

Whilst Moravec, like Warwick, rejects Mazlish's optimism, arguing: 'intelligent machines, however benevolent, threaten our existence because they are alternative inhabitants of our ecological niche' (1988 p.100), he does not see the posthuman as the prosthetics of RoboCop. Instead he believes the future lies in brain uploading. Agreeing with the limitations of the flesh, Moravec's solution to being superseded by intelligent machines and possible human extinction, is to propose uploading human minds and downloading them directly into computers:

> 'It is easy to imagine human thought freed from bondage to a mortal body – belief in an afterlife is common. But it is not necessary to adopt a mystical or religious stance to accept the possibility. Computers provide a model for even the most ardent mechanist. A computation in progress – what we can reasonably call a computer's thought process – can be halted in midstep and transferred, as program and data read out of the machine's memory, into a physically different computer, there to resume as though nothing had happened. Imagine that a human mind might be freed from its brain in some analogous (if much more technically challenging) way.' (1988 p.4)

This idea is wholly unlike the posthuman cognitive enhancements discussed by Bostrom and Sandberg (2007), as Warwick points out: 'Hans [Moravec]

suggested that as humans we could fight back [against intelligent machines] by become machines ourselves.' (2002 p.70) The major objection to becoming a machine in this fashion revolves around a disagreement between, what Moravec's calls, the "body-identity" and the "pattern-identity" position. (1988 pp.116-117)

The conflict between these two perspectives can be explained with reference to the teleportation technology of Cronenberg's *The Fly*. Although clearly a fantastical method of transportation, there seems to be two obvious theoretical methods of teleporting someone. The first would be for telepod-A to conduct a complete body-scan and atomise subject-1. Then to transport, via a conduit, subject-1's atomised body to telepod B, where it is reassembled using the blueprint gleaned from the body scan. The second method would be for telepod-A to conduct a complete body-scan of and destroy subject-1. Then to transmit, digitally, the body scan information to telepod B, where it is decoded and used to *generate* an exact copy of subject-1 at the atomic level. The major difference between these processes is that the first method transports the subject whereas the second destroys it and creates a copy. Becoming a posthuman machine would entail using the second method; the same one Brundle implies is used by the telepods of *The Fly*: 'The computer is giving us its interpretation of a steak. It's translating it for us, it's re-thinking it rather than reproducing it, and something's getting lost in the translation.' [25.41]

Moravec believes, as with the pattern-identity position, that there is no difference between subject-1 and copy of subject-1. As such, copy of subject-1 will exit

telepod-B with exactly the same knowledge and thought processes of subject-1, even the *illusion* of remembering stepping into telepod-A. The process will be one of complete continuity. Yet others may see things differently, as Moravec admits, the body-identity position argues:

> 'Regardless of how the copying is done, the end result will be a new person. If it is I who am being copied, the copy, though it may think of itself as me, is simply a self-deluded impostor. If the copying process destroys the original, then I have been killed. That the copy may then have a great time exploring the universe using my name and my skills is no comfort to my mortal remains.' (1988 p.116)

Of course subject destruct may not be a necessary element of copying a brain to be inputted into a machine, although ironically, as has already been mentioned, it may be necessary in teleportation to avoid duplication. However if the telepods were used as a duplicator, then it becomes easy to get to the nub of the conflict. Moravec's stance is that if subject-1 were duplicated in the teleportation process – resulting in subject-1 stepping out of telepod-A and copy of subject-1 stepping out of telepod-B – then it would be meaningless for subject-1 to claim primacy over copy of subject-1, for they are ostensible the same. This said, many will argue this position is counterintuitive. Nevertheless, when someone *successfully* downloads a file from, say the web, it seems meaningless to refer to this file as a copy, rather than the original, for the information held on both systems is identical. The crux of this argument therefore seems to depend on the acceptance, or rejection, of the

premise that human identity is an illusion and the human mind is simply biological information that is independent of the medium in which it is conveyed.

Whilst Moravec's ideas may seem a flight of fantasy, it should be noted that Warwick not only agrees with its technical feasibility, he implies such work is already underway, although at a much lower level: 'All of this, though, requires the ability to obtain a detailed plan of the way a human brain is arranged. Technically we are at present a long way from achieving this. Indeed, we are only just about able to do such a thing with lower insects.' (1998 p.266) In fact Moravec's work seems to reflect the musing of former Chief of the Theoretical Division at NASA, Robert Jastrow:

> 'At last the human brain, ensconced in a computer, has been liberated from the weaknesses of mortal flesh. Connected to cameras, instruments and engine controls, the brain sees, feels, and responds to stimuli. It is in control of its own destiny. The machine is its body; it is the machine's mind. The union of mind and machine has created a new form of existence, as well designed for life in the future as man is designed for life on the African savannah. It seems to me that this must be the mature form of intelligent life in the Universe. Housed in indestructible lattices of silicon, and no longer constrained in the span of its years by the life and death cycle of a biological organism, such a kind of life could live forever. It would be the kind of life that could leave its parent planet to roam the space between the stars. Man as we

know him will never make that trip, for the passage takes a million years. But the artificial brain, sealed within the protective hull of a star ship, and nourished by electricity collected from starlight, could last a million years or more. For a brain living in a computer, the voyage to another star would present no problems.' (1981 pp.166-167)

While debate continues regarding how, whether, or why there should be a marriage between man and machine; the advantages of having a posthuman, rather than a machine, as police officer in *RoboCop*, is self-evident. This said Graham stresses RoboCop's 'technologies mark his superiority and strength, but this is tinged with a sense of the irrevocable loss of his humanity (symbolised by shadowy memories of his home and family). Although cybernetic and prosthetic enhancements have saved Murphy's life, they are ambivalent blessings'. (2002 p.209) Indeed while Wood acknowledges Holland's belief that 'a "genuine" human mind is identified as the essential element of a human person: and a mind is precisely what we are told RoboCop... has retained' (1995 p.160), and Best (1987) and Bukatman's (1994 p.258) conviction that RoboCop's subjectivity is best accounted for by attributing it to the "meat component" (the remaining human elements), she questions these assumptions. Concluding, in a similar fashion to Graham, that: 'Robocop's subjectivity cannot be simply allied with its organic parts; it has become different, altered by its intersection with technology. This difference is clear in RoboCop's statement about Murphy's family: "I can feel them, but can't remember them."' [82:24] (2002 p.166)

While this perception may have held true during the early stages of RoboCop's inception, by the end of the film it seems to have been lost. Indeed, the assertion of Murphy's character within RoboCop surely undermines Graham and Wood's assumptions that posthuman technology is *necessarily* a "dehumanising force".

It should also be noted that the origin of Murphy's perceived "dehumanisation" is centred on his memory being wiped; for this generates the confusion and loss surrounding his family, and undermines RoboCop's ability to interact compassionately with other humans. The irony here is twofold. Firstly, wiping the candidate's memory does not seem a necessary element of the posthuman. There is certainly no suggestion that the memory is wiped for a practical reason, like facilitating the procedure, or cleansing the brain of past weaknesses in character. It probably only happens in *RoboCop* to add to the despicableness of OCP i.e., their blasé circumvention of the need for a willing participant. Secondly, analogous memory loss, caused by conditions such as amnesia, dementia, and Alzheimer's etc., is endemic within human populations and also seen as dehumanising, but this has nothing to do with the posthuman. Ironically it can be argued that posthuman technologies may help preserve humanness in this respect, by helping to restore and maintain memory. Indeed it appears that Graham and Wood have mistaken augmentation, rather than memory loss, as the dehumanising element in RoboCop.

Contrary to arguments focussing on Murphy's dehumanisation; RoboCop's humanisation, symbolised in the reclamation of his name Murphy, results in the

Murphy/RoboCop hybrid appearing human plus, rather than human minus: a stronger and more robust human, with extra senses, greater longevity and an assisted and expanded memory; rather than a castrated, biological automaton with a human face.

CHAPTER IV

MONOTHEISM

Salvation from Technologism?

Film: *The Matrix* (1999)

"Thomas Anderson" is leading a double life, by day he is a computer programmer for respectable software company "Metacortex", by night he is a computer hacker going by the alias "Neo".

Late one evening a hacker named "Trinity" contacts Neo, explaining that she is aware of his desire to uncover what The Matrix is, but warns him he is being watched. Later at work Anderson is delivered a mobile telephone on which he is contacted by someone called "Morpheus" who warns him to leave the building. Anderson fails to do this and is apprehended by the police and questioned, by what appears to be, law-enforcement agents. During his interrogation Anderson is presented with evidence appertaining to his criminal activities

as Neo. It is then suggested that the authorities are willing to overlook these offences if he cooperates with their attempt to arrest Morpheus.

Released by the Police, Neo and Morpheus arrange to meet. Morpheus explains that The Matrix has to be seen to be understood. He then offers Neo two capsules one red, one blue, saying: 'This is your last chance. After this, there is no turning back. You take the blue pill, the story ends. You wake up in your bed and believe whatever you want to believe. You take the red pill, you stay in wonderland and I show you how deep the rabbit hole goes.' [27:49]

Having taken the red capsule, Neo awakes and finds himself naked, coupled by wires and submerged in a small liquid-filled chamber, located in what appears to be a labyrinth of thousands of similar chambers. Having been disconnected and rescued by Morpheus and his crew, Neo is told that while he believes it is 1999, it is fact closer to the year 2199. He is also told that the world he knows exists only as a part of a neural-interactive simulation, known as The Matrix. In an important piece of back-story exposition, Morpheus

explains that 'at some point in the early twenty-first century all of mankind was united in celebration. We marvelled at our own magnificence as we gave birth to AI... a singular consciousness that spawned an entire race of machines. We don't know who struck first, us, or them. But we know it was us that scorched the sky. At the time they were dependent on solar power and it was believed that they would be unable to survive without an energy source as abundant as the sun.' [39:44]

However the machines have developed a new power supply, one that involves enslaving humans and plugging them into The Matrix. Morpheus continues: 'The Matrix is a computer generated dream world, built to keep us under control, in order to change a human being into this [a battery]' [41:38] It then transpires that the reason Neo has been rescued from The Matrix is because he is believed to be "The One", the only person capable of controlling The Matrix and thus freeing the other humans.

Unfortunately the renegades' progress towards this goal is hampered along the way by "Cypher", one of

Morpheus's crewmates, who betrays them to the machines in a deal that would see him reconnected to The Matrix. Whilst hatching the agreement Cypher laments to "Agent Smith", a sentient program designed to resolve anomalies within The Matrix, that: 'You know, I know this steak doesn't exist. I know that when I put it in my mouth, The Matrix is telling my brain that it is juicy and delicious. After nine years, you know what I realise? Ignorance is bliss.' [61:11] The price for Cypher's treachery is his reinsertion into The Matrix, having been rendered unaware of its nature as a simulation, and to be rich and important within it.

Later in the film Cypher implies that by failing to explain fully the reality of The Matrix before being offered their only chance of leaving it, Morpheus has manipulated them into making the choice he desires: 'He [Morpheus] lied to us, Trinity. He tricked us. If you [Morpheus] had told us the truth, we would have told you to shove that red pill right up your ass!' [84:46]

Luckily Neo is eventually revealed as The One and saves the day, although this is only possible after the requisite chasing, hiding, shooting and the killing-off

of most minor cast members; with the addition this time of some snazzy martial arts assisted with photogrametric and CGI visual effects.

In *Anarchy, State, and Utopia* Nozick offers a "brain-in-vat" thought experiment entitled the "experience machine":

> 'Suppose there were an experience machine that would give you any experience you desired. Superduper neuropsychologists could stimulate your brain so that you would think and feel you were writing a great novel, or making a friend, or reading an interesting book. All the time you would be floating in a tank, with electrodes attached to your brain. Should you plug into this machine for life, preprogramming your life experiences?... Of course, while in the tank you won't know that you're there; you'll think that it's all actually happening.... Would you plug in?' (1974 pp.42-43)

The Matrix appears to incorporate an adaptation on this theme although reversed, the question here being not whether to plug into an illusion, but rather whether to unplug from an illusion.

Life inside the simulation "The Matrix" is portrayed as mirroring current post-industrial society and thus resonates well with its target audience because it

challenges the *status quo*: 'Every vacuous hour of MTV, every superficial fashion magazine, every dot.com telling us to "click here!" further alienates us from any scrap of an idea that might lend some sort of transcendent or enduring meaning to our allotted eighty years.' (Fontana 2004 pp.215-216) However at the same time it appears awash with realist overtones, to the extent that it 'eventually tempers the techno-anxiety it reflects by establishing the supremacy of the real'. (Dinello 2005 p.179)

While the film clearly implies the "Nebuchadnezzar's" crew, except "Tank" and "Dozer" who were: 'born free, right here, in the real world' [45:11], have *chosen* the real above the illusion, there are two elements that suggest mature informed consent has not played a central role in this process. The first of these relates to maturity, as Morpheus states: 'we never free a mind once it's reached a certain age.' [43:01] This is explained away as a problem of flexibility; that older minds cannot adjust to life outside The Matrix. Yet the other side of this argument is that younger minds are more reckless, impressionable and easier to manipulate. The second point is lack of information, for if the portrayal of Neo's disconnection is used as a template, it becomes clear that little or no prior ontological information is ever divulged, making an informed decision to unplug patently impossible. This ignorance is then compounded by Morpheus' obfuscation: 'you are a slave, Neo. Like everyone else, you were born into bondage, born into a prison that you cannot smell or taste or touch, a prison for your mind. Unfortunately, no one can be told what The Matrix is; you have to see it for yourself.' [27:10] When these elements are brought together, it becomes evident that disconnecting from The

Matrix is more a case of misinformation and recklessness, rather than a considered decision.

The type of person who chooses to leave The Matrix is also telling. It is important here to note that the film portrays a self-selected population of individuals who have unplugged. However by portraying *only* those who have chosen to leave The Matrix, the viewer is kept ignorant of those who have, or would, refuse the red pill and their reasons behind such a decision. Zynda argues that when discussing *The Matrix* and Nozick's experience machine with his undergraduate philosophy classes, only 'a small number insist that they would... be hooked up to the Experience Machine. (I have never asked these students if their lives are not all that great. That would be most impolite).' (2004 pp.54-55) The implication here is that only the disillusioned, or dysfunctional, would choose to "hook up" to an illusion. Yet ironically, these appear to be the types of individual who choose to disconnect in *The Matrix*. Those individuals like Neo, unfulfilled, socially inept, generation X technogeek loners with no meaningful interpersonal relationships. When Neo shows doubt regarding his decision to disconnect from The Matrix: 'I can't go back, can I?' [42.46], this manifests itself as unsettled confusion and disbelief at his new environment, not the pining of loved ones lost. An explanation for this anomaly might be that disconnection from The Matrix for Neo *et al.*, like connecting to the experience machine for some of Zynda's students, is more an adventure for those who have little or nothing to lose, rather than an indication of ontological desire.

Indeed, if this argument were reversed it appears to suggest that those who value their present lives, would, in all likelihood, choose to remain where they are immaterial of whether it is reality or an illusion. This argument can be further investigated with the creation of a more accurate reversal of Nozick's thought experiment: one without a realist moral crusade or the systematic targeting of young social recluses, and with free, full and prior disclosure of all information relating to disconnection. In this scenario an individual is informed that disconnection from The Matrix entails the loss of everyone and everything they have ever cared for inside the illusion: partners, family, friends, colleagues, pets, belongings etc., and also holds greater experience limitations, more hardship and less fulfilment. The pertinent question now seems to be which type of person would prefer to reside outside the illusion and would they be doing so for highfalutin ontological reasons or because the illusion offered them little to give-up?

The character "Cypher" further undermines the concept of ontological snobbery. Having been disconnected from The Matrix for nine years, Cypher has finally rejected the moral crusade of emancipation and now wishes to be reconnected. Of course the film portrays this decision as hedonistic moral bankruptcy and counterpoints it with the moral virtue of the other rebels, as Hanson argues 'The moral correctness of their position is also illustrated by the moral poverty of Cypher, the character who wants to return to the Matrix. Cypher is shallow and stupid; he betrays and kills his colleagues, is bitter at being rejected as a lover and leader, and wants to forget the truth.' (2004 p.32) However in a world of moral

relativism, this self-righteousness can easily be undermined by simply redirecting motivation. If Cypher's return to The Matrix were portrayed as driven by a desire to reunite with a loved one, rather than for greed, then sympathies would quickly change and Cypher would become a flawed hero. This said *The Matrix* appears to have pretensions beyond a reworking of a brain-in-vat thought experiment, for it also follows the hero/saviour narratives of classic mythology.

Having first studied the myths of Theseus and Romulus, Raglan widened his research into hero mythology, concluding that 'when these stories were dived into separate incidents there were certain types of incidents which ran through all, or most, of the stories.' (1934 p.212) From his analysis and using the story of Oedipus as the archetype, Raglan proposes that the "Hero of Tradition" can be broken down into a pattern of twenty-two incidents:

'1. His mother is a royal virgin 2. His father is a king, and 3. Often a near relative of his mother, but 4. The circumstances of his conception are unusual, and 5. He is also reputed to be the son of a god. 6. At birth an attempt is made, often by his father, to kill him, but 7. He is spirited away, and 8. Reared by foster-parents in a far country. 9. We are told nothing of his childhood, but 10. On reaching manhood he returns or goes to his future kingdom. 11. After a victory over the king and/or a giant, dragon or wild beast, 12. He marries a princess, often the daughter of his predecessor, and 13. Becomes king. 14. For a time he reigns uneventfully, and 15. Prescribes laws, but 16. Later he loses

favour with the gods and/or his subjects, and 17. Is driven from the throne and city. 18. He meets with a mysterious death, 19. Often at the top of a hill. 20. His children, if any, do not succeed him. 21. His body is not buried, but nevertheless 22. He has one or more holy sepulchres.' (1934 pp.212-213)

Although the events are listed in a coherent order, Raglan does not consider their chronology a necessity. Using this schema, the story of Neo reads: We (9) hear nothing of his childhood, but on reaching manhood he leaves and then (10) returns to the Matrix, only (17) to be driven out again. He (19) ascends, to (18) meet with a mystical death, dying simultaneously in and outside The Matrix, but (21) his body is not buried. He then (11) defeats the Leviathan that controls The Matrix and (13) becomes its master, but proclaims he will (14) reign uneventfully, although (15) change the laws of the programme. He (20) has no progeny. Whilst a score of eleven out of twenty-two may seem rather unimpressive, when it is noted that, possibly due to format brevity, the film makes no reference to Neo's infancy, the story of his manhood contains eleven out of the last fourteen of Raglan's incidents.

This said it is probably the events and references *beyond* the hero of tradition that are most noteworthy; specifically, the similarities between the story of 'Neo, the Messiah-like hero of *The Matrix*' (Zynda 2004 p.44) and that of Jesus of Nazareth – who scores nineteen on the Raglan scale. [20:46] (*The God Who Wasn't There* 2005) These include: having disciples, prophecies of his arrival [43:52], a disciple

doubting his status [86:31], being betraying by a disciple to the authorities for a reward [61:07], being resurrected [119:39], and ascending to the heavens [124:06]. In addition, Neo's love interest is called "Trinity", the Christian doctrine that God is one being who exists, simultaneously and eternally, as the Father, the Son (incarnate as Jesus of Nazareth), and the Holy Spirit. Interestingly *The Matrix*'s protagonist is referred to by three names: Mr. Anderson, Neo and "The One". Tank states that: 'The last human city. The only place we have left.' [45:22] is called "Zion", a term used to symbolize Jerusalem and the Promised Land to come, in which God dwells among his chosen people. Morpheus' hovercraft is called the Nebuchadnezzar [36:21] a probable reference to Nebuchadnezzar II (a.k.a. Nebuchadnezzar the Great), who is referred to in the biblical books of Jeremiah and Daniel. The ship's name plaque states the vessel is a "Mark III No. 11" [36:35], it seems a doubtful coincidence that chapter three, verse 11 of the Gospel according to Saint Mark, reads: 'And unclean spirits, when they saw him, fell down before him, and cried, saying, Thou art the Son of God.' (KJV 1611/1997 NT p.47) More overtly, at the beginning of the film "Choi" thanks Neo by saying: 'Hallelujah, you're my saviour, man. My own personal Jesus Christ.' [8:18]

It is interesting to note that a number of academics (Dundes 1976, Jackson 1985, Wells 1999) have argued that the story of Jesus of Nazareth is based on an amalgamation of mythical characters rather than an actual historical figure; and frequently mention the similarities between the life of Jesus and the mythical figures of Osiris/Horus, Dionysus and Mithras etc.. Consequently, it could be

argued that the story of Neo has its origins in Pagan solar deities rather than Christianity, or post-Christian Gnosticism as some have argued. (Frankfurter 2003)

It is clear that whether in the symbolic sense of Neo's corporate cubical rat-race office work, his social inadequacies due to his cyberspace leisure activities, or in the actual posthuman technology that links the body to the illusion: '*The Matrix* warns against surrendering control of our lives to technology, giving up our bodies to machines.' (Dinello 2005 p.176) Beyond this is the implication that salvation from meaninglessness is to found *not* by recourse to humanistic modernity or transcendence through existentialism, but by regression to Christian mysticism.

Agent Smith implies that humans need salvation beyond the controlling force of technology, when he declares:

> 'Did you know that the first Matrix was designed to be a perfect human world? Where none suffered, where everyone would be happy. It was a disaster. No one would accept the program, entire crops were lost. Some believed that we lacked the programming language to describe your perfect world. But I believe, that as a species, human beings define their reality though misery and suffering. The perfect world was a dream that your primitive cerebrum kept trying to wake up from.' [88:15]

This is *de facto* testimony that the humans of The Matrix are unfit for the perfection of Christian Heaven. In addition, it seems reasonable to assume that whilst governed by the laws of a computer programme, the humans cannot undergo the atonement and spiritual amelioration necessary to attain the afterlife. It therefore follows that release from The Matrix is only the first step towards ultimate Christian salvation.

Nevertheless Fontana ponders: 'If we are to make the claim that *The Matrix* is a religious movie, we must ask, "So, where is God?"' (2004 p.210) His solution is to suggest either there is no understanding of God in the film, or "God is played by God" in sense of the intangible God of Christian belief. Yet it seems clear that God is manifest throughout the film in the concept of "free will" (the *liberty of indifference*); freedom from the deterministic controls of The Matrix symbolising the free will given by a Christian God. As Morpheus recites: 'As long as the Matrix exists, the human race will never be free.' [43:43]

However for the free will of Christianity to exist it necessitates escape from more than just The Matrix. It entails the repudiation of, not only, theological determinism, the idea that anything less than a complete specification of every event would be incompatible with God's omnipotence:

> 'So will does not belong to the nature of God any more than other natural things do, but it is related to that nature in the same way as

motion and rest, and all other things which we have shown to follow from the necessity of the divine nature and to be determined by it to existence and operation in a certain way.' (Spinoza 1677/2000 Corol.2 p.102)

It also necessitates the rejection of contemporary scientific materialism, where 'natural laws are strictly determinative of future consequences, so that given one initial state of a physical system, at a definite later time there is one and only one outcome possible.' (Weatherford 1991 p.3) As Wooldridge succinctly argues: 'In the context of a completely physical biology, free will poses no problem – it simply doesn't exist.' (1968 p.183) Indeed Gray believes: 'the idea of free will does not come from science. Its origins are in religion – not just any religion, but the Christian faith'. (2003 p.xii)

This said, nefarious arguments have been made purporting that scientific discovery, in the form of quantum theory, has resurrected free will. A weak counterargument to this is the hyper-improbability, even considering chaos theory, of a sub-atomic quantum event affecting the electrochemical activity of the brain sufficiently to alter a single action in a lifetime. A stronger counter is that even if such an event happened, it would be meaningless to free will. For quantum theory implies superpositions are "random" events. Unfortunately the *liberty of indifference*, the ability to initiate the creation of new causal chains of events, necessitates the existence of physical laws that transcend both the determined *and* the random.

Like *most* contemporary Christians, Neo rejects that he lacks free will: 'Because I don't like the idea that I'm not in control of my own life.' [25:47] Unfortunately, in the film, he actually rejects "fate" but this must be a colloquialism for "determinism". Fatalism is patently absurd, for it entails agent free will with the exception of specific fated events. If someone is fated to die tomorrow, it is conceptually possible for them to alter the means by which they die; the only element where they have no control is the ability to sidestep tomorrow's death. Determinism on the other hand entails only the illusion of free will (the *liberty of spontaneity*), with the agent having no control, and *all* future events being unchangeable and unavoidable.

The irony here is Neo's repudiation of determinism is based on life inside The Matrix, where, it must be assumed, the material determinism of the computer programme holds. It is therefore an example of the potency of the illusion of free will. It should also be noted that when the "Oracle" says: 'And don't worry about the vase' [70:04] moments before Neo breaks it, this also happens inside The Matrix, and thus can be seen as the result of a mathematical calculation of necessary future events, analogous with the capacities of Laplace's Demon (1814/1951 p.4), rather than a miraculous prophecy.

Nevertheless the ultimate, and often overlooked, conundrum offered-up by *The Matrix* is that the salvation of mankind is *not* to be found in freeing them from the illusion. When the final victory arrives, there is no suggestion of releasing the

thousands of millions of humans still plugged into The Matrix network. The liberation the rebels seem to have been fighting for is not freedom from the illusion, but freedom from the artificial intelligence controlling it. When Neo states his intentions at the end of the film: 'to show these people what you don't want them to see. I'm going to show them a world, without you, a world without rules and controls, without borders or boundaries; a world where anything is possible' [123.05], he is clearly not talking about showing them the "real" world, the earth of circa 2199, the one suffering from a nuclear winter. He is talking about showing them a different illusion, admittedly this will be one that is not controlled by the artificial intelligence, but nevertheless it will still be illusion. This last point is not simply implied, for Neo is shown, moments after his declaration, inhabiting a continuing and populated illusion. The irony here is *The Matrix* concludes by implying, contrary to its realist aspirations, that life within the illusion is preferable to the real.

The crux now becomes whether Neo can deliver freedom whilst mankind is still connected to the illusion. If he can, then *The Matrix* can be read as a tale of theist salvation through spiritual awakening, the rescuing of humanity from moral relativism, modernistic technoscience, and the inevitable enslavement this combination will entail, via acceptance and affirmation of the Christian faith and its ideals.

If he cannot, then *The Matrix* can be read as a tale of the salvation of man via duplicity; the acceptance, for the sake of humanity, of a religion that ultimately

cannot deliver on its claims. This potentially "Neo"conservative interpretation of *The Matrix* can be founded on the Straussian belief that liberalism, in its modern form, contains within it an intrinsic tendency towards relativism and that:

> 'the very openness of the open society contains within itself a self-destructive germ. This disease to which Strauss pointed is... the tendency of democratic tolerance to degenerate, first into the easygoing belief that all points are equal... and then into the strident belief that anyone who argues for the superiority of a distinctive moral insight, way of life, or human type is somehow "elitist" or antidemocratic – and hence immoral.' (Tarcov and Pangle 1987 p.929)

From this standpoint comes the belief that liberal societies must be saved from themselves – in this instance its adoption of posthuman technologies – by recourse to hegemonic laws and their enforcement. Indeed, rescue from the "tyranny of the majority" (Tocqueville 1835/2000 p.106, Mill 1859/1985 p.5) can only be brought about by manipulating the cultural attitude. To this end, Strauss saw the answer in the methods of ancient political philosophy, no better example being the utilisation of "noble lies":

> 'And even supposing this were otherwise and not as the argument has proven, still the lawgiver, who is worth anything, if he ever ventures to tell a lie to the young for their good, could not invent a more useful

> lie than this, or one which will have a better effect in making them do what is right, not on compulsion, but voluntarily.' (Plato 348BCE/2000 663d-e p.39)

Having accepted this, it is but a small step to the conclusion that if salvation, from relativism and in turn salvation from the posthuman, lay in reversing the 'series of Western ideas [that] starts with "providence' which is transposed to "progress" and shifts from there into "nihilism"' (Lyon 1996 p.5); then the pragmatic solution may be to promote providence, here in the form of Christianity doctrine, even if the protagonists do not believe in such things themselves.

This neoconservative paternalist reading suggests *The Matrix* is symbolic of a subliminal and potentially subversive, propaganda campaign attempting to promote the *insincere* espousal of Christian faith to a suggestible audience, in an attempt to save them from themselves.

More Human than Human

Film: *Blade Runner: The Director's Cut* (1982)

On-screen written back-story: 'Early in the 21st Century, THE TYRELL CORPORATION advanced robot evolution into the NEXUS phase - a being virtually

identical to a human - known as a Replicant. The NEXUS 6 Replicants were superior in strength and agility, and at least equal in intelligence, to the genetic engineers who created them. Replicants were used Off-world as slave labour, in the hazardous exploration and colonization of other planets. After a bloody mutiny by a NEXUS 6 combat team in an Off-world colony, Replicants were declared illegal on earth - under penalty of death. Special police squads - BLADE RUNNER UNITS - had orders to shoot to kill, upon detection, any trespassing Replicant. This was not called execution. It was called retirement.' [2:25]

Los Angeles, November, 2019. Retired "Blade Runner" "Rick Deckard" is involuntarily re-enlisted into the Police by his old boss Captain "Bryant", after the near fatal shooting of Blade Runner "Holden". It transpires that four "replicants", humanoid cyborgs nearly indistinguishable from humans and illegal on earth, have arrived on the planet having hijacked a shuttle craft Off-world. Three nights ago they tried to break into the "Tyrell Corporation", the company that develops replicants, one of them being killed in the process. Bryant explains: 'We lost the others. On the

possibility they might try to infiltrate his employees, I had Holden go over and run "Voight-Kampff" tests on the new workers. Looks like he got himself one.' [13:53]

Deckard's task is to find and eliminate the three remaining outlaw replicants, but Bryant warns that this model of replicant, the Nexus 6, is: 'designed to copy human beings in every way except their emotions. The designers reckoned that after a few years they might develop their own emotional responses. You know, hate, love, fear, anger, envy. So they built in a fail-safe device... a four year life span.' [15:15]

The issue here appears to centre on the current method of distinguishing between a covert replicant and a human: the Voight-Kampff test, which is an empathy test that measures 'capillary dilation of the so-called blush response, fluctuation of the pupil, involuntary dilation of the iris.' [18:04] The implication is that it *may* be possible for a replicant, over time, to become sufficiently emotionally adept to pass such a test and thus become functionally indistinguishable from a human. Worried about this possibility, Bryant

sends Deckard to the Tyrell Corporation to test their Nexus 6 model.

At the Tyrell Corporation Deckard meets with "Dr. Eldon Tyrell" who requests to be indulged by seeing the Voight-Kampff test performed on a human before it is performed on the Nexus 6 replicant: 'I want to see it work on a person. I want to see a negative before I provide you with a positive.' [18:30] At this point Tyrell offers "Rachael" a Tyrell employee as a human subject. Having completed an admittedly more extensive test than normal, Deckard declares that Rachael is in fact the replicant, but paradoxically she does not know it. Tyrell confirms this, explaining that Rachael's ignorance comes from been programmed with false memories, creating a continuity between past and present.

Deckard and "Gaff", another Blade Runner, then search the flat belonging to "Leon", the replicant who shot Holden, and find clues suggesting his whereabouts. Meanwhile replicants Leon and "Roy Batty" coerce replicant eye bioengineer "Chew" into divulging that befriending "J.F. Sebastian" is the best way of gaining

access to Tyrell, the only person Chew believes knows the answers to Batty's questions on: 'Morphology, longevity, incept dates.' [28:08]

Rachael visits Deckard at home and asks for an explanation as to why Tyrell has erroneously told him she is a replicant. She then produces a photograph of her as a child with her mother, as suggested proof of her ancestry. Deckard retorts by reciting a number of Rachael's most personal secrets, secrets she has not divulged to anyone. Confused, Rachael is told that these are: 'Implants! Those aren't your memories, they're somebody else's. They're Tyrell's niece's.' [32:55]

Clues from Leon's apartment lead Deckard to a bar where "Zhora", the third replicant, is performing. Masquerading as a trade union representative Deckard gains access to Zhora, but his line of questioning makes Zhora suspicious and she attacks him. However, another performer interrupts the attack, prompting Zhora to flee, only to be chased, caught and "retired" (killed) by Deckard. Moments later, Bryant appears and informs Deckard that he now has four replicants to

retire, the three still on the run from the shuttle craft and Rachael who has absconded from the Tyrell Corporation.

Deckard spots Rachael across the road and attempts to catch her but is waylaid by Leon, who demands to know how long he has to live. Deckard is overpowered and badly beaten in an ensuing mêlée that threatens to end in his death, Leon exclaiming after Deckard passes out: 'Wake-up, time to die.' [60:31] Deckard is however rescued at the last moment by Rachael who shoots Leon with Deckard's relinquished gun. Back in Deckard's flat, Rachael asks if Deckard would hunt her down if she ran, to which he replies: 'No. No, I wouldn't. I owe you one. But somebody would.' [63:39] Rachael and Deckard's relationship then seems to develop intimately.

In the meantime "Pris", the fourth replicant, has befriended Sebastian and on Batty's arrival they convince him to take Batty to see Tyrell. During Batty and Sebastian's meeting with Tyrell, Batty establishes that Tyrell is incapable of extending the lifespan of a

replicant, at which point Batty kills Tyrell and leaves alone.

Deckard receives orders from Bryant to search Sebastian's address, having first confirmed that Sebastian's body was also found with Tyrell's. On entering Sebastian's home Deckard is ambushed and overpowered by Pris, but manages to retrieve his pistol and shoot her before she can finish him off.

Batty then arrives at Sebastian's flat, at which point Deckard open fires on him but misses, resulting in Batty declaring: 'Not very sporting to fire on an unarmed opponent. I thought you were supposed to be good. Aren't you the good man? Come on Deckard. Show me what you're made of.' [91:41] Batty then toys with Deckard, eventually forcing him to retreat out onto the building's roof, where he attempts a jump from one building to another. This he manages, although not wholly successfully, and is left clutching a beam overhanging a precipitous fall; Batty then follows but his jump is more successful.

Having safely traversed the buildings, Batty walks over to Deckard and seemingly waits for him to fall. However, just as Deckard looses his grip, Batty grabs hold of his arm and pulls him to safety.

Batty, who is rapidly reaching the end of his four year lifespan, now openly ponders his short life and laments: 'All those moments will be lost in time like tears in the rain. Time to die.' [102:35] Batty then dies. Gaff appears and questions Deckard whether he has finished, Deckard's confirmation prompts Gaff's rejoinder: 'It's too bad she won't live. But then again, who does?' [104:36]

Deckard returns home and finds Rachael alive and well. Preparing to flee, Deckard then discovers an origami unicorn on the floor outside the flat. The implication here is that Gaff, an origami practitioner, has already been to Deckard's abode, found Rachael sleeping and decided not to "retire" her. With the knowledge that, at least Gaff has given them a head start, Deckard joins Rachael in the lift and the end credits role.

At the core of *Blade Runner* is the question of taxonomy, specifically the intelligibility and defining characteristics of the term "human". It offers up the human to the android cyborg, the real to the simulated, but fails to recommend an intuitive method of differentiation:

> 'Technologies call into question the ontological purity according to which Western society has defined what is normatively human. For example, in *Blade Runner*... [r]eplicants are machines that are superficially indistinguishable from humans. At the same time, however, humans have come more and more to resemble machines in the high-tech, alienated, urban wasteland surroundings. The fragile and indeterminate nature of the very boundary between humans and artefacts, sentience and inertness, authentic and artificial, constitutes the heart of the novel and its film adaptation.' (Graham 2002 p.5)

Blade Runner opens with back-story information that technological development has become sophisticated to the point of producing robots virtually identical to humans. The film then depicts a scene with two seemingly human characters, Holden and Leon, which is totally bereft of specific reference to their status. The fact that it is not until moments later, in Bryant's office, that there is testimony to Leon being a replicant helps to underline their indistinguishable nature.

Having created an environment of potential character paranoia and genus second guessing, this is immediately castrated, firstly, by the visual introduction of the

replicants that need retiring; and secondly, with dialogue that implies the presence of replicants on earth is a freak occurrence: 'No sir. Not embarrassing, because no one's ever going to find out they're down here. Because you're going to spot them, and you're going to air them out.' [12:20] This point is reinforced further when the film depicts the replicants as having red eyes (Rachael [63:08] Pris [71:05] Batty [82:44] etc.). Although the irony here is twofold: firstly, that the identifier is for the audience only (as the film characters do not acknowledge this aberration) and secondly, that a *natural* reaction to certain lighting conditions (the reflecting of light off the retina) is being used to denote the artificial.

Paradoxically the result of these plot devices is to undermine the importance of identifying who is, or is not, a replicant, for they have already been identified. However having done this the film still manages to tap into the insecurity surrounding man's special position in the great chain of being, but does so obliquely. Instead of the more conventional idea of offering up the human animal to the non-human animal facilitating questions regarding whether their consciousness is a matter of ontological or relative difference; *Blade Runner*, by juxtaposes humans with replicants – entities specifically designed to be commensurate in both physical form and cognitive ability – challenges whether, as indistinguishable "equals", they deserve the same status. If replicants are worthy of human exclusivity then the so-called "essence of man" is either quantified as an ontological characteristic that other species *can* attain, or exposed as only a relative characteristic. However, if replicants are deemed undeserving of equal reverence, the onus becomes accounting for this.

Blade Runner appears, at least initially, to suggest "empathy" as a possible identifier between human and replicant, and thus possibly the essence of man. Yet whilst the novel: *Do Androids Dream of Electric Sheep?*, on which *Blade Runner* is loosely based, clearly states: 'Empathy, evidently, existed only within the human community, whereas intelligence to some degree could be found throughout every phylum and order including the arachnida' (Dick 2004 p.27); some commentators have suggested the film 'attempts to establish memory as the locus of humanity.' (Landsberg 1995 p.184) Landsberg argues that in the opening scene, with Holden and Leon, 'what "catches" the replicant is not the absence of empathy, but rather the absence of a past, the absence of memories. Leon cannot describe his mother, cannot produce a genealogy, because he has no past, no memories.' (1995 p.184) However, this surely cannot be the case, for if a replicant could be identified simply by not being able to account for its past, then the Voight-Kampff test becomes elaborate nonsense. In the opening scene Leon is in a heightened state of anxiety and seems to crack under the pressure of the test. Later it becomes apparent that he lacks a keen mental acuity; aware of his deficiencies Leon probably believes he will be exposed by the test and cracks under the pressure of seconding guess the answers needed to avoid detection. Indeed Rachael can account for her past, but is still identified as a replicant; and it is made clear that the reason Rachael was difficult to identify as a replicant was not because of her implanted memories *per se*, but because she has developed something akin to empathy. The implication being, that social interaction plays an important role in the development of empathy and Rachael has, through her

implanted memories, gained many years of something akin to social experience. The fact that Rachael is successfully exposed as a replicant may only imply that implanted social experience is not a sufficient basis for the development of a more comprehensive grasp of empathy.

However, the suggestion that empathy may be a human identifier is further complicated by Batty's killing of Tyrell and the helpless Sebastian; for while these are the actions of a replicant without empathy they are recognisable as the actions of a psychopath: an empathy deficient *human*. Consequently, if Batty lacks the essence of man because he is deficient of empathy, then consistency dictates that human psychopaths are also lacking the essence of man.

To confuse matters further, the narrative then appears to build on the proposed link between experience and the development of empathy. Here Batty's relationship with Pris, his sense of loss at her death, and his own impending demise, now seems to coalesce as the vehicle for Batty's empathic maturation; climaxing with his decision not to kill Deckard. For unlike Rachael who appears to have developed empathy as a result of artificial memories, Batty has developed it from direct experience.

The question of the essence of man having being thrown into disarray, *Blade Runner* ends with Deckard and Rachael fleeing as implied lovers. Again boundaries are called into question, specifically whether Deckard's decision to be

with Rachael is laudable or disturbing; and whether Deckard can have a meaningful relationship with Rachael, who is "merely" a machine.

Blade Runner's questioning of the essence of man is similarly played out in the contemporary posthuman debate. Here one popular counterargument to posthuman enhancement is based on the belief that humans have intrinsic value and dignity beyond other animals. This value is based on the notion that there are some essential, but obscure, superiority characteristics that compose man's essence. The worry is that technological interventions in human evolution might corrupt human nature and thus undermine human superiority.

Exponents of this theory argue that humans without human dignity are *ipso facto* no longer "human". As a result, enhancement technologies are seen as not only having the power to damage human nature, but also the ability to render the human extinct. Andorno notes: 'The notion of human dignity is regarded by many of our contemporaries as the last barrier to irreversible biotechnological interventions on our own nature.' (2001 p.151)

Unfortunately the concept of human nature is somewhat controversial and for many centuries debate has raged over a number of key issues: does human nature exist, and if so, at what point does a human gain this quality? Is it at birth, conception, or simply by being part of the human species? Can the title be lost? 'Is there some qualitative difference between humans and other animals, or is it all a question of quantities and balance? Is there one key thing that all humans have,

or is there a range of qualities, irregularly dispensed? And, most crucially, is human nature inherently good, bad or indifferent?' (Ruse 1995 p.376)

Contemporary thinking on human nature generally centres on the dominant scientific and sociological positions that assert there is little material evidence for the existence of human nature, beyond its social construction, it being an artefact invented by humans to legitimise their exploitation of non-humans; and the dominant humanist and religious positions that assert the existence of human dignity is self-evident, either as a result of evolutionary ontological leap, or by gift from God. Possibly even both – note the Pope's Message to the Pontifical Academy of Science (John Paul II 1996), which amends the encyclical *Humani Generis* (Pius XII 1950) by stating that evolution is now considered *more* than a hypothesis. This was seen as further cementing the compatibility, with certain conditions, between the theory of evolution and the Catholic Church.

Unfortunately, the Achilles' heel of the human essence argument is its potential to be undercut by investigation of the very nature of its existence. For if the essence of man cannot be identified then the legitimacy of its existence, and thus its need to be protected, is brought into question. Fukuyama's response to this is to warn: 'Denial of the concept of human dignity – that is, of the idea that there is something unique about the human race that entitles every member of the species to a higher moral status than the rest of the natural world – leads us down a very perilous path.' (2003 p.160)

Of course for theists, legitimising the superiority of human beings over all other earthly existence and that they deserve dignity does not demand recourse to empirical evidence, as Fukuyama notes: 'For Christians, the answer is fairly easy: it comes from God. Man is created in the image of God, and therefore shares in some of God's sanctity, which entitles human beings to a higher level of respect than the rest of natural creation.' (2003 p.150) This belief is of course predicated on chapter one, verses 26 to 29 of The First Book of Moses, Called Genesis:

> 'And God said, Let us make man in our image, after our likeness: and let them have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth. So God created man in his own image, in the image of God created he him; male and female created he them. And God blessed them, and God said unto them, Be fruitful, and multiply, and replenish the earth, and subdue it: and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth. And God said, Behold, I have given you every herb bearing seed, which is upon the face of all the earth, and every tree, in the which is the fruit of a tree yielding seed; to you it shall be for meat.' (KJV 1611/1997 OT p.2)

This foundation also enables the theists to accuse posthuman advocates of undermining the sanctity of the human, by encroaching on God's territory in attempting to perfect the species:

'The last and most seductive of these disquieting prospects – the use of biotechnical powers to pursue "perfection", both of body and of mind – is perhaps the most neglected topic in public and professional bioethics. Yet it is, I believe, the deepest source of public anxiety about biotechnology, represented in the concern about "man playing God".' (Kass 2003 p.10)

This argument is nevertheless only a theist rallying cry rather than a serious attempt to engage with the overwhelmingly secular technophiles, for having conceded they are attempting to perfect the species, they will reject the premise that there is a God to encroach on. This said, not all theists accept the "man playing God" argument follows from scripture, in fact some, like Mackay, argue the reverse:

'Undertaken in the proper spirit, human engineering is not *playing* God at all, but *serving* God.... Human perfectibility by human effort is impossible; the grace of God is quite essential if man is ever to reach perfection. But this surely is not the issue. What concerns us in human engineering is not perfectibility at all; it is something much more modest we might call *improvability*. And the idea of human improvability, so far from being heretical, is something the Christian must examine as a matter of duty.... There is no sin in seeking to mitigate the effects of our fallenness as human beings.' (1979 p.59)

Unfortunately for those who advocate the existence of human dignity from a standpoint *not* founded on Genesis, their position is constantly being confused and undermined by the rapidly escalating complexity of scientific enquiry into the ontology of man. Whereas in the past human and non-human animals appeared fundamentally different, hence Lichtenberg's aphorism: 'That man is the noblest creature may also be inferred from the fact that no other creature has yet contested this claim. (1800/1990 Bk.D p.59) The indisputable identifiers usually associated with human superiority such as: consciousness, sentience, social hierarchy, intelligence, complex cerebral cortex, developed language etc. have now been brought into question, if not totally rejected. Also the seeming arbitrariness of these characteristics has been questioned, thus adding weight to claims they are little more than "speciesist". (Ryder 1970; Singer 1974) That is they are attempts by humanists to retain the Christian "Great Chain of Being" (having rejected theism) by creating biased ranks in which humans are placed at the top by design.

In addition the striking technological advancements in computer technology, and the recent neurological research that no longer perceives the human brain and the computer CPU as incommensurate, may result in the eventual doom of the most espoused bastion of human supremacy, the ranking of "most intelligent". To make matters worse, the ever increasing demand for human egalitarianism has undermined and frustrated the flexibility of humanists to adopt new hyper-specific uniqueness and superiority characteristics, lest they be socially exclusive. An example of this would be the use of Fletcher's fifteen "positive propositions"

underpinning his concept of "personhood". (1979 pp.12-16) These being: minimum intelligence, self-awareness, self-control, a sense of time, a sense of futurity, a sense of the past, the capability of relating to others, concern for others, communication, control of existence, curiosity, change and changeability, balance of rationality and feeling, idiosyncrasy and neocortical functioning. The socially unpalatable problem with this notion of personhood is it excludes not only the likes of embryos and foetuses, but also infants, young children, and the mentally infirm. Indeed, medical conditions such as Alzheimer's and dementia could result in the ability for someone to obtain personhood in their youth and then lose the title before they die.

With this in mind, the final haven for many secularists advocating human dignity seems to be equivocation and ambiguity in the form of the indefinable. The pronouncement that the essential and defining characteristic of humanity, the foundation for their anthropocentrism, and that which needs protecting, is the *je ne sais quoi* that makes us human. Some are sufficiently worried about keeping these qualities elusive, thus enabling unseen alteration and protecting them from direct interrogation, that they dare not even adorn them with a collective epithet: 'there remains some essential human quality underneath that is worthy of a certain level of respect – call it Factor X.' (Fukuyama 2003 p.149)

In defending secular human dignity Fukuyama claims that:

'Perhaps the most famous effort to create a philosophical basis for human dignity was that of Kant, who argues that Factor X was based on the human capacity for moral choice. That is, human beings differ in intelligence, wealth, race, and gender, but all were equally able to act according to moral law or not. Human beings had dignity because

> they alone had free will – not just the subjective illusion of free will but the actual ability to transcend natural determinism and the normal rules of causality.' (2003 p.151)

Here Fukuyama appears to be implying that Kant believes humans are special and deserving of dignity because they *alone* have free will, a free will beyond an illusion of free will, as humans are detached from the laws of causality. Fukuyama appears to confirm this interpretation by adding: 'It would be very difficult for any believer in a materialistic account of the universe – which includes the vast majority of natural scientists – to accept the Kantian account of human dignity.' (2003 p.151) Of course what Kant said was:

> 'As an intelligence, a rational being counts himself as belonging to the world of the understanding, and simply as an efficient cause belonging to the world, he calls his causality a *will*. On the other hand, however, he is also a part of the world of the sense, where his actions are encountered as mere appearances of that causality. But we can have no insight into how these actions are possible by means of such a causality, since we have no direct acquaintance with it. Instead, these

actions, when viewed as belonging to the world of sense, have to be understood as determined by other appearances – namely, by desires and inclinations.... Therefore, although I regard myself from one point of view as a being that belongs to the world of sense, I shall have to recognise that, as an intelligence, I am subject to the law of the world of understanding – that is, of reason, which contains this law in the Idea of freedom, and thus in the autonomy of the will. I must therefore regard the laws of the world of the understanding as imperatives for me and see the actions that conform to this principle as duties.' (Kant 1785/2002 §3 453-454 pp.252-253)

The gist of Kant's argument is that although humans do *not* have free will, because they are physical entities and thus obey physical laws, it is meaningless to talk of humans without free will. Our language, attributions of responsibility, the nature of our interactions with others, and ultimately the coherence of our lives, is founded on the assumption we have free will. For Kant the knowledge that humans are *not* free is, from a practical perspective, utterly useless. An analogy for Kant's position can be found in the anecdote involving the epistemological sceptic Pyrrho of Elis, who allegedly ran away from a cantankerous dog. While for Pyrrho it is theoretically possible, if not probable, that said dog did *not* exist in a realist sense, this would have been of little practical consolation if Pyrrho had been bitten by it.

Whilst debate continues regarding the potential success of Kant in his next step – linking the *pure* reason that humans do not have free will, with the *practical* reason (the illusion) that they do – any transcendence of causality Kant proclaims is ultimately perceptual in nature, rather than physical as Fukuyama claims.

Nevertheless Kant's attempt to formulate a basis for human dignity using the concepts of free will (whether an illusion or not) and moral choice, clear fails to satisfy Fukuyama who demands greater discrimination. The problem seems to centre on the compatibility of human dignity and the posthuman. Unlike Kant, who was never exposed to the idea of transcending the human, Fukuyama questions whether a posthuman would be worthy of dignity. That is, even if it had Kant's prerequisites, free will and moral choice.

In an argument that seems specifically designed to act as the basis for restricting posthuman technologies, Fukuyama states: 'Factor X cannot be reduced to the possession of moral choice, or reason, or language, or sociability, or sentience, or emotions, or consciousness, or any other quality that has been put forward as a ground for human dignity. It is all of these qualities coming together in a *human whole* [my emphasis] that make up Factor X.' (Fukuyama 2003 p.171)

The inclusion of the term "human whole" is of primary importance because it spells out Fukuyama's belief that for something to possess "Factor X" it not only has to be human by necessity (the customary *ad hoc* ruling-out of non-humans) and have *all* the requisite qualities associated with human dignity (it is easy to get

the impression that such a list is open to constant revision and would contain indefinable elements if necessary); it also has to be a specific type of human, that is a "human whole". However, what is a human whole? Fukuyama states that: 'what gives us dignity and a moral status higher than that of other living creatures is related to the fact that we are complex wholes rather than the sum of simple parts'. (2003 p.171) He then marries this holistic approach with the belief that:

> 'If Factor X is related to our very complexity and the complex interactions of uniquely human characteristics like moral choice, reason and a broad emotional gamut, it is reasonable to ask how and why biotechnology would seem to make us less complex. The answer lies in the constant pressure that exists to reduce the ends of biomedicine to utilitarian ones – that is, the attempt to reduce a complex diversity of natural ends and purposes to just a few simple categories like pain and pleasure, or autonomy.' (Fukuyama 2003 p.172)

Here Fukuyama is arguing that the potential will soon exist, if it does not already, for the creation of humanoid babies, through biotechnology, that lack the complexity to be a human whole. The inference is that such babies, *de facto* posthumans in the eyes of Fukuyama, would be deficient in Factor X and thus be unworthy of human dignity: 'For this will be the constant trade-off that biotechnology will pose: we can cure this disease, or prolong this person's life, or

make this child more tractable, at the expense of some ineffable human quality like genius, or ambition, or sheer diversity.' (2003 p.172)

Unfortunately Fukuyama's position seems to fall down on two accounts. Firstly, his conception of human dignity is, like Kant's, predicated on assumptions that are equally susceptible to accusations of being both *ad hoc* and without foundation. Whilst Fukuyama's argument is systematically speciesist, Kant's anthropocentricity is based on his assumption that *only* humans have the free will that allows moral choice. This said if moral choice were perceived as grounded in the reification of social contracts, then the dynamics and hierarchies of some animal social groupings may undermine Kant's assumptions empirically. Secondly, Fukuyama attempts to defend his speciesism by recourse to "human complexities", an obscure, ambiguous and potentially fictional identifier that he fails to account for fully. Indeed obvious questions arise, such as whether humans gained these complexities over time or all at once. If it is the former, then why did, and can, *only* humans gain them? If it is the latter, then what accounted for this ontological leap? If losing complexity is disadvantageous, is gaining further complexity advantageous? If posthuman technologies have the potency to reduce complexity, do they also have the potency to increase complexity? Or does the contemporary human have the optimal level of complexity, and if so, what accounted for this optimisation?

Paradoxically the success of the complexity argument seems contingent on theism. Arguing as a secular humanist, Fukuyama's defence of the human is

equally susceptible to accusation of incoherence, arbitrariness and speciesism as historical characterisations of human dignity. However from a theist perspective, where God makes man unilaterally complex, and in his own image (the implication being, with the optimal level of complexity), the potency of Fukuyama's defence against the posthuman seems to increase exponentially. The aetiology behind this discrepancy – and others like it within the posthuman debate – may be the tendency of some theists to adopt "methodological" secularism in an attempt to disseminate and legitimate arguments that are ultimately theist in nature. To this end, a telling statement may be Fukuyama's apparent nod to the religious gallery when he argues: 'The problem of how consciousness arose does not require recourse to the direct intervention of God. It does not, on the other hand, rule it out, either.' (2003 p.171)

Interestingly McKibben's defence against the posthuman also claims humans have a quintessential element: 'What makes us unique is that we can restrain ourselves. We can decide not to do something that we are able to do. We can set limits on our desires. We can say "Enough".' (2004 p.221) In fact this ability seems to form the central tenet of his text entitled *Enough*, in which he argues humans should accept what they have – a veritable cornucopia of what man *needs* to survive, in the West at least – and leave it at that. That is:

'We need to do an unlikely thing. We need to survey the world we now inhabit and proclaim it good. Good enough. Not in every detail; there are a thousand improvements, technological and cultural, that

we can and should still make. But good enough in its outlines, in its essentials. We need to decide that we live, most of us in the West, long enough. We need to declare that, in the West, where few of us work ourselves to the bone, we have easy enough [sic]. In societies where most of us need storage lockers more than we need nanotech miracle boxes, we need to declare that we have enough stuff. Enough intelligence. Enough capability. Enough.' (2004 p.112)

Of course, McKibben's claim that human self-restrain is idiosyncratic is not to be taken too seriously. Nevertheless his position is quite perplexing, for he appears to be advocating the universal technological *status quo*, predicated on vague and unconvincing platitudes. Indeed his position is not fleshed-out beyond the testimony that First World living is, in the most part, unobjectionable and therefore little necessity to change it. However in arguing this, McKibben advocates a position that is unpalatable to both orthodox theists, who generally desire technological cessation to be limited to its use on humans, and radical environmentalists who generally desire wholesale technological regression.

This said McKibben appears to have copied Fukuyama, in that he has, pragmatically, adopted a methodological position. That is, in an attempt to affect genuine change, environmentalist McKibben has cast-off the shackles of the "return to nature" environmental narrative, and in a potentially shrewd move, adopted a compromise position, one more palatable to his, primarily US, readership. To this end, a telling statement may be his unconvincing attack on the

environmental movement, which appears more a case of self-deprecation transforming into vindication:

> 'Environmentalists share, I fear, some measure of the guilt. The movement to value everything else on earth has often talked carelessly about people, spreading the idea that we are a grim and uncontrollable race, a cancer cell metastasising unchecked across the defenceless fabric of nature. From the moment that the Reverend Malthus first advanced his theory that reproduction would inevitably outstrip food production, a certain kind of despair has informed an awful lot of what we would eventually call environmentalism. Whenever I've given a lecture on some of the ways we might mend our environmental troubles, someone from the audience has usually risen to ask if, say, global warming isn't simply a way for nature to "get rid of us", a species more trouble than we're worth. I feel that despair myself sometimes; there are days when my own consumer lust and essential apathy convince me we're doomed' (2004 pp.115-116)

Habermas' defence against the posthuman differs substantially from that of Fukuyama's and McKibben's, specifically in that it is *not* founded on human uniqueness. Instead Habermas argues posthuman technologies should be resisted because they will have a detrimental effect on the human psyche:

'We therefore tend to forget that the revolution of breeding practices by genetic engineering is itself no longer governed by the clinical mode of *adjustment* to the inherent dynamic of nature. What it suggests, rather, is the *dedifferentiation* of a fundamental distinction which is also constitutive of our self-understanding as species members.' (Habermas 2003 p.46)

Superficially, Habermas seems to be arguing that the adoption of genetic engineering will result in humans no longer being governed by the laws of nature. The implication here is twofold, firstly, biotechnological breeding practices are unnatural; and secondly, current breeding practices are by contrast, natural. To concede biotechnological breeding practices are unnatural, is one thing; but to suggest that, the medically supported and socio-economical selected, breeding practices in the First World follow the 'inherent dynamic of nature' is to bring Habermas' concepts into question. However a further examination of Habermas' position suggests that he is actually advocating the protection of the *perceived* natural breeding practices because he believes they are an inextricable part of our self-understanding.

Habermas argues reproductive genetic engineering necessitates a level of predestination that will result in fatalism and resentment in those who have been manipulated. However he also believes: 'Liberal eugenics needs to face the question of whether the *perceived* dedifferentiation of the grown and the made,

the subjective and the objective, is likely to affect the autonomous conduct of life and moral understanding of the programmed person.' (2003 pp.52-53)

The basis of this position is human intuition, the belief that: 'The "self" of this end in itself we are obliged to respect in the other person is primarily expressed in the authorship of a life guided by his own aspirations. Everybody interprets the world from his point of view, acts according to his own motives, is the source of authentic aspirations.' (Habermas 2003 p.55) The implication here is that biotechnology will rob the individual of respect from others because he will not be the author of his own motives. Yet like Kant, Habermas believes that the human is *only* a material object, bound by the physical laws of causation, and thus has no authorship. Consequently Habermas must instead be arguing that biotechnology will rob the individual of respect because he will not be *perceived* to be the author of his own motives.

Habermas continues: 'Eugenic interventions aiming at enhancement reduce ethical freedom insofar as they tie down the person concerned to rejected, but irreversible intentions of third parties, barring him from the *spontaneous self-perception* [my emphasis] of being the undivided author of his own life.' (2003 p.63) The telling phrase here is "spontaneous self-perception", for it seems to denote the subjective illusion of free will, otherwise known as the *liberty of spontaneity*. From this perspective Habermas is arguing the reason humans should reject biotechnology is *not* because it would reduce human autonomy, but because it would result in the widespread, but ultimately erroneous, belief that it would

reduce human autonomy. To borrow from Kant's terminology, Habermas is *not* trying to protect human autonomy in the *pure* sense (which does not exist), but rather in the *practical* sense.

This said, Habermas' acknowledges that the biotechnological child will *not* lose the perception of free will, but rather will have the realities of a lack of freedom forced upon them. Indeed, when this happens, the actions and testimonies of those deemed to lack autonomy will reflect on the self-perception of those deemed to possess it. That is, the genetically engineered will argue that although they evidently lack autonomy, being a product of biotechnology, they still possess intuitive freedom. Consequently, they will reveal intuitive freedom is not contingent on material freedom, and thus provoke a wider questioning of the intuitions and realities of human autonomy.

An adaptation of this scenario is played in *Blade Runner*, with the actions and intentions of the replicants challenging our ontological assumptions. For replicants not only look and act like humans, they also have intentions, dynamic intelligence, and intuitive autonomy. Yet, the conviction that a robot *cannot* be free, for it is little more than a material object obeying physical laws, grounds our socio-cultural understanding of the notion. This apparent contradiction challenges the assumption that free will is necessary, or even existent, in humans.

Habermas' attack on biotechnology is founded on both the belief that the posthuman will challenge our self-perception, and the assumption this would be

detrimental to the human psyche, presumably because our intuitive freedom is seen as positive and fundamental to being human. The implied solution to this threat is to sidestep the challenge by repudiating posthuman technologies.

This said, it must be noted that those who champion Habermas' argument cannot solicit widespread advocacy. For the fundamental problem with his position, as with all error theories, is that the wholesale acceptance of the stance ultimately destroys it. This is because it is impossible to view the error without the necessary "God's-eye-view". However, having done this, it is then equally impossible to regress back into holding the initial and erroneous belief. Consequently, the success of this argument is ironically dependent on its ability to remain hidden from the majority.

Doubtlessly some will respond to Habermas by questioning whether man is best served by maintaining such an illusion; whether challenging our self-perception, like challenging the existence of God, is *necessarily* detrimental? Others will highlight that human self-perception is susceptible to challenge from more than just the posthuman; and thus question whether Habermas also advocates the rejection of such technologies as genetic testing and the creation of perceptually autonomous machines.

However, possibly the most successful counterargument to Habermas' position is the accusation that it defends little more than an apparition. Kant ultimately believes that the knowledge humans are *not* free, is, from a practical perspective,

utterly useless. From this position human self-perception is not contingent on a belief in autonomy, but rather its intuitive nature. For Kant, the rejection of material autonomy is compatible with living life as an intuitively autonomous agent, for the knowledge that humans lack free will cannot nullify their intuition that they possess it.

The Power of Nightmares

Film: *The Fly* (1986)

In a vain attempt to impress journalist "Veronica Quaife", socially inept scientific genius "Seth Brundle" boasts that he is 'working on something that'll change the world and human life as we know it.' [2:05] Unfortunately Quaife has heard it all before and is dismissive of Brundle's offer to visit his laboratory; she has three further interviews to conduct before she can leave and already seems bored with the science convention.

This said Brundle's persistence eventually wins out, with Quaife not only accompanying, but driving him home. It is during this journey that increasingly

queasy Brundle admits: 'I'm always like this. It's motion sickness. When I was a kid, I puked on my tricycle. I hate vehicles.' [3:27]

Having arrived at an old fish packing house, Brundle invites Quaife inside and demonstrates his invention: the "Telepod". In true stage magician style he asks the journalist for something uniquely personal and places the offering, a stocking, into one of the telepods only for it to disappear and then reappear in a different pod. Initially incredulous, Quaife is told: 'You get it, all right. You just can't handle it. Your stocking has just been teleported, from one pod to another. Disintegrated there, and re-integrated there, sort of. It'll change the world as we know it, right?' [09:14]

Amazed Quaife takes her covertly recorded interview to ex-lover and editor of "Particle Magazine" "Stathis Borans". However Borans is scornful, suggesting Quaife has fallen for a party trick and when Brundle suddenly appears at the door, Borans is off-hand, and leaves to attend to more important business.

Conversing over lunch, Brundle explains to Quaife that the telepods are not ready for public dissemination, that: 'something important is missing... I can only teleport inanimate objects.' [13:59] Nevertheless Quaife still intends to continue with her article. In a last ditch attempt to stop her, Brundle offers Quaife the opportunity to follow the project to completion and then to have exclusive book rights.

Placated, Quaife watches Brundle dramatically fail to complete the teleportation of a live baboon, the ape being turned inside-out on reintegration. Having paused for an intimate moment together, Brundle conducts an experiment with Quaife's help. This involves teleporting a steak and then comparing its taste with that of an unteleported control. Quaife's conclusion that the teleported steak tastes synthetic, prompts Brundle to surmise that: 'The computer is giving us its interpretation of a steak. It's translating it for us, it's re-thinking it, rather than reproducing it and something's getting lost in the translation.' [25:42]

Having made certain programming amendments, a second baboon is teleported, but this time successfully,

resulting in Quaife's droll remark that: 'You'll never have to get car sick again!' [29:13] While celebrating Quaife learns that Borans intends to publish an exposé of the telepods in the next magazine issue and in an attempt to stop him, she leaves the laboratory without explanation. Her meeting with Borans is successful but in the meantime, Brundle gets drunk and jealous and decides to hasten the pace of his research by teleporting himself. Unfortunately, unknown to Brundle, a housefly enters the telepod with him on his successful journey.

During the proceeding days Brundle and Quaife begin to notice subtle changes, nay, improvements, in the scientist's physique and performance. In a later conversation with Quaife, Brundle explains that these changes have prompted him to ask the telepod control computer: 'if it improved me and it said it didn't know what I was talking about.... And I'm beginning to think that the sheer process of being taken apart atom by atom and put back together again, why it's like coffee being put through a filter. It's somehow a purifying process. It's purified me, it's cleansed me.' [43:57]

However these changes soon take on a more sinister form and Brundle suffers from personality change, complexion deterioration and peculiar hair growth. Worried Quaife has some of the hair cuttings analysed and confronts Brundle with the results stating that: 'The guy at the lab had trouble identifying them. He finally came to the conclusion that they were definitely not human.... In fact, very likely insect hairs.' [55:47]

Brundle's physiological and psychological changes accelerate, and bits of his anatomy start falling off and new appendages appear. After four weeks of separation, Quaife visits the lab and is shocked by Brundle's deformed appearance and the news that he has identified the aetiology of the "disease": 'A fly got into the transmitter pod with me that first time when I was alone. The computer got confused; there weren't supposed to be two separate genetic patterns and it decided to, splice us together.... My teleporter turned into a gene splicer.... Now I'm not Seth Brundle anymore. I'm the offspring of Brundle and housefly.' [63:47]

However as the hideous transformations continue, Brundle realises that he is not afflicted by a potentially contagious mutagenic disease, but rather he is metamorphosing into a chimera: 'I'm becoming something that's never existed before. I'm becoming "Brundlefly".' [69:01] Nevertheless, Brundle develops a theoretical fusion "refinement" procedure, designed to decrease to a minimum the percentage of fly in Brundlefly, by gene-splicing it with one or more "pure" human subjects. [73:42] However, having done so, he seemingly overlooks the serendipitous arrival of shotgun wielding Borans as an opportunity to test his theory. Indeed, having easily overpowered the magazine editor, Brundle seems driven by a bizarre intersexual desire to fuse himself with, the now pregnant, Quaife.

Having "manhandled" Quaife into the first telepod, initiated the fusion procedure and entered the second telepod, Brundle is left to rue not having killed the magazine editor. For Borans now blasts shotgun pelts through the cables connecting Quaife's telepod to the control computer. In an unsuccessful attempt to intervene, Brundle manages to get half way out of his telepod before the fusion procedure is activated. The

result is both Brundle and the open third of the second telepod, being teleported and fused. Reappearing from a third telepod, this amorphous cyborg is met by Quaife and the shotgun, the outcome is a reluctant mercy killing.

Adam Curtis asserts, in his three part documentary *The Power of Nightmares: The Rise of the Politics of Fear*, that:

> 'In the past, politicians promised to create a better world. They had different ways of achieving this. But their power and authority came from the optimistic visions they offered to their people. Those dreams failed. And today, people have lost faith in ideologies. Increasingly, politicians are seen simply as managers of public life. But now, they have discovered a new role that restores their power and authority. Instead of delivering dreams, politicians now promise to protect us from nightmares. They say that they will rescue us from dreadful dangers that we cannot see and do not understand. And the greatest danger of all is international terrorism. A powerful and sinister network, with sleeper cells in countries across the world. A threat that needs to be fought by a war on terror. But much of this threat is a fantasy, which has been exaggerated and distorted by politicians. It's a dark illusion that has spread unquestioned through governments

around the world, the security services, and the international media.'

[0:04]

The apparent crux of this standpoint is the Straussian belief that liberal democracies contain the seeds of their own destruction; that the liberal ideal of individual freedom ultimately results in the questioning and undermining of the values, authority and ideology that holds society together. Building on this foundation, the proposition is that having degenerated into relativism, fear has become the only political agenda in the First World; and that within post-industrial societies: 'Those with the darkest nightmares became the most powerful.' [2:24]

Curtis examines the nightmare that is international Islamic terrorism, a "phantom" he believes has been created by the US neoconservatives, and one that has changed the Global political landscape. Interpreting the statements and actions of British Prime Minster Tony Blair, Curtis proposes:

'What Blair argued was that faced by the new threat of a global terror network, the politician's role was now to look into the future and imagine the worst that might happen and then act ahead of time to prevent it. In doing this, Blair was embracing an idea that had actually been developed by the Green movement: it was called the "precautionary principle". Back in the 1980's, thinkers within the ecology movement believed the world was being threatened by global

warming, but at the time there was little scientific evidence to prove this. So they put forward the radical idea that governments had a higher duty: they couldn't wait for the evidence because by then it would be too late; they had to act imaginatively, on intuition, in order to save the world from a looming catastrophe. [50:24]

However, the problem with this type of thinking is highlighted in Curtis' interview with Bill Durodie:

> 'But once you start imagining what could happen, then there's no limit.... What it is, is a shift from the scientific, "what is" evidence-based decision making, to this speculative, imaginary "what if" based worst case scenario.' [51.56]

In a society where the most fantastical threats are likely to glean the greatest attention and yield the maximum reaction, politics becomes an exercise in illusion in which there is a vested interest in inflating and exaggerating any perceived danger. As long as the implied threat contains the merest element of verisimilitude, the populace will be motivated to seek protection.

Of course fear has always been a political commodity, hence Mencken's aphorism: 'The whole aim of practical politics is to keep the populace alarmed (and hence clamorous to be led to safety) by menacing it with an endless series of hobgoblins, all of them imaginary.' (1918/2005 p.53) However, when the

perceived success of the precautionary principle – as motivating change regarding global warming – is associated with the fainthearted, feckless and self-obsessed individualism of First-World decadence, the potency of nightmares appears to increase exponentially.

In the introduction of his book *Wonderwoman and Superman*, John Harris asks: 'We can now, literally, change the nature of human beings.... Whether we should do so and in what ways is the subject of this book. Should we celebrate the ingenuity and imagination of the biotechnologists who have made all this possible or should we rather try to limit and control their activities?' (1993 p.2) The subtle but clearly loaded nature of Harris' question speaks volumes for the veneer of neutrality coating many posthuman texts that lack the temerity to be evangelical on the subject. By contrast the introduction of *Citizen Cyborg*, by James Hughes declares: 'This book argues that transhuman technologies, technologies that push the boundaries of humanness, can radically improve our quality of life, and that we have a fundamental right to use them to control our bodies and minds.' (2005 p.xii)

This style tends to be repeated when questions are asked about the efficacy of such technologies. While the timid 'see neither supermen nor monstrosities emerging from gene splicing' and believe the immortal prosthetic posthuman is: 'the language of technological hyperbole, which comes pretty close to pure fantasy' (Mazlish 1993 p.175, pp.220-221); the impetuous fantasise of ontological change and the creation of minor deities:

> 'The Singularity will allow us to transcend these limitations of our biological bodies and brains. We will gain power over our fates. Our mortality will be in our own hands. We will be able to live as long as we want (a subtly different statement from saying we will live forever). We will fully understand human thinking and will vastly extend and expand its reach. By the end of this century, the nonbiological portion of our intelligence will be trillions of trillions of times more powerful than unaided human intelligence.' (Kurzweil 2005 p.5)

However while those advocating posthuman technologies prophesise a cornucopia of human advancements, others envisaging nothing but catastrophe:

> 'Although most of the planet is blissfully unaware of what is approaching, lulled by promises of a "great big beautiful tomorrow", the near future will be anything but beautiful. A terrifying future thunders toward mankind, an impending fate embodied by monstrous, blasphemous combinations of human and animal genetic materials, of man/machine cyborgs, and of beings not only with increased capacities and extended life-spans, but also with re-engineered morality void of compassion. This future is so abhorrent as to almost defy the imagination.' (Quayle 2003 p.1)

To this end Cronenberg's rendition of *The Fly* encapsulates all fronts, while Brundle's alteration is universal and its potency is exponential, his metamorphosis is seemingly painless and unhurried. The posthuman technology improves then impairs, recreates then destroys. The human is transformed into superhuman: with superior reactions, athleticism and sexual prowess; and then into freak: sprouting hairs, deteriorating skin and losing figure nails. Becomes a demigod: walking on ceilings and leaping unharmed off tall buildings; and then a grotesque: shedding appendages, developing an exoskeleton and regurgitating liquefying saliva.

While Dinello believes *The Fly* 'powerfully dramatises the dire consequence of a random mishap in the technology of genetic engineering as the horrors of transgenic creatures' (Dinello 2005 p.197), it can also be seen as one of the purest of posthuman narratives, for it deals with the subject obliquely. The fact that the telepods are not designed as gene splicers functions to isolate the idea of posthuman endeavour from direct scrutiny. By focusing, foremost, on a mistake in the execution of scientific method, and then having this error as the essential ingredient of the derivation into the posthuman, the film attains distance from the *realpolitik* of posthuman technoscience: the moral issues, paymasters, vested interests and hidden agendas. Indeed, Brundle's work is already somewhat removed as no-one: 'knows what the project really is' [10:11], and neither he nor his project is corrupted by wealth and power: 'But they [Bartok Science Industries] leave me alone because I'm not expensive. And, they know they'll end up owning it all, whatever it is' [10:21], hubris or narcissism: 'I don't work alone.

There's a lot of stuff in there I don't even understand.... I farm bits and pieces out to guys who are much more brilliant than I am.' [09:55]

In addition Brundle's character is portrayed as benign and his research, which is ultimately only a form of transportation, seems as laudable. In fact, by representing Brundle as sincere, genial, and magnanimous bordering on self-deprecating, and by making his research benign and unsullied by corruptive influences and morally unimportant, *The Fly* appears to break from the formulaic science fiction scientist who tends to be 'driven by arrogance, greed, and impetuous, self-absorbed creativity.' (Brem and Anijar 2003 p.22)

The geniality of Brundle makes it difficult to dismiss his rather unpalatable level-headed scientific rationalism, in the face of transformation, simply because he is a dislikeable character. Indeed, instead of descending into a panic or destructive rage at his metamorphosis, Brundle is philosophical throughout the entire process. When he initially displays enhanced physiological abilities such as quicker reactions, greater strength and stamina etc., it prompts Brundle to question 'the computer if it had improved me' [43:57]; deep in transition, he gains new physiological abilities, the capacity to walk on the ceiling etc., and ponders: 'I seem to be stricken by a disease with a purpose wouldn't you say, maybe not such a bad disease after all?' [68:16]; metamorphosing even further, Brundle amasses a collection of discarded human appendages, but is still accepting: 'You're relics. Yes you are. You can't deny it; vestigial, archaeological, redundant, artefacts of a bygone era, of historical interest only.' [75:06]

Indeed in a seemingly prescient statement concerning the cosmetic-surgery culture, the contemporary dissatisfaction with the "imperfect" body, Brundle states: 'I know what the disease wants.... It wants to turn me into something else. That's not too terrible is it? Most people would give anything to be turned into something else.' [68:41]

While Brundle's transformation is ultimately depicted as a graphically horrific experience; his demeanour, his apparent lack of pain, and the fact telepods were not designed as gene splicers, all seems to detract attention away from knee-jerk technophobia. In fact the reverse may be true, for the only credible method of returning Brundle to his human form is by mastering the telepods as gene splicers, rather than teleporters. This possibility is alluded to in the form of the "The Brundlefly Project": 'Goal: to decrease to a minimum the percentage of fly in Brundlefly. Solution: the fusion by gene-splicing of Brundlefly with one or more "pure" human subjects.' [73:42]

Paradoxically, although *The Fly* withholds "successful" gene manipulation, the telepods represent a potential solution a number of concerns surrounding the posthuman debate. This is because they offer the ability to transform the human genetically on an individual level, without the need for a gradual and systematic lineage of genetic manipulation. This sidesteps issues regarding incremental and endemic corruption of genetic information by the transmission of unforeseen mistakes; and allows for a far quicker and more systematic procedural refinement.

It also renders mute questions regarding the genetic manipulating of the unborn, for telepod genetic transformation can take place at any age and could even include "informed" consent.

Interestingly, while the gory nature of *The Fly* clearly has the requisite "yuck" factor to resonate as an allegory for technoscientific precaution, it does *not* appear to be the narrative of choice for those who repudiate the posthuman. One reason why this is the case may be that the linchpin of *The Fly*'s nightmare is a solvable technological issue. The mistake Brundle makes, allowing the computer to fuse two separate entities together instead of teleporting them as separate entities, appears easily resolvable. As such mankind is perpetually attempting to solve technological problems. Offering-up a litany of "potential" safety issues as the sole reason to refrain from developing a potentially beneficial technology, is hardly likely to carry the argument in the long run. Indeed, those who reject posthuman development but advocate analogous "therapeutic" technologies are actively undermining the safety issue argument. For the solving of similar issues surrounding their therapeutic use will ultimately trickledown resulting in the reduction of safety issues surrounding their non-therapeutic use.

Indeed, the worst case scenarios referenced by those who oppose the posthuman tend *not* to centre on corruption, mistakes, accidents, monsters, or technology out of control, but rather on the exaggerated nightmare of success. When Habermas (2003) argues that development towards the posthuman is contrary to the good life (pp.1-15) and will undermine the concept of freedom and the self-understanding

of humanity (pp.16-74); and Kass (2004) states the posthuman is against god (pp.231-256), human flourishing (pp.29-54) and that immorality is inhuman (pp.257-276), they are referring to the "successful" utilisation of such techniques. Again when McKibben (2004) claims the posthuman will trivialise human life (pp.1-67) and Fukuyama (2003) declares it is contrary to the concepts of human rights (pp.105-128), human nature (pp.129-148), and human dignity (pp.148-177), they are not referring to safety issues and technological mistakes, but the fruition of the posthuman as conceived by its advocates.

In attempting to counterargue the pro-posthuman narrative, its detractors may have adopted a more advanced argument than their opponents. Fighting rhetoric with rhetoric; they have reinterpreted the utopian storyline to read as a dystopia nightmare, inverting the hyperbole surrounding the posthuman to help create a similar narrative depicting the imminent death of the human. In doing this they may have managed to inflict a potential *coup de grâce* to their adversaries, for every positive blow scored for the posthuman, is counterpunched as a negative blow against the human, *ad infinitum*. To value the posthuman, is to disregard the human, and of course a confrontational stalemate, is a *de facto* win for the human.

Unsurprisingly, having created their fantasy nightmare scenario, the death of the human as a result of the success of posthuman technology, some critics of posthuman enhancement have followed the neoconservative lead and co-opted the precautionary principle as a tool to fight their cause. In doing this they have, like certain radical elements of the environmental movement, extended the

precautionary principle beyond its original methodological scepticism, transforming it from a constructive evaluative tool into an absolutist theory at odds with technoscience.

George Annas is an advocate of using the "extreme" version of the precautionary principle as a defence against posthuman enhancement. He argues:

> 'The environmental movement has adopted the precautionary principle to help stem the tide of environmental alterations that are detrimental to humans. One version of this principle holds that "when an activity raises threats of harm to human health or the environment... the proponent of the activity, rather than the public, should bear the burden of proof' – that the activity is more likely to be beneficial than harmful.' (Annas, Andrews and Isasit 2002 p.153, internal quote from Raffensperger and Ticker 1999 p.354)

This extreme interpretation of the principle is usually hardened further by marrying it with the belief that technological benefits – whether environmental or in this case posthuman – are practically inconceivable:

> 'It may be that species-altering techniques, like cloning and inheritable genetic modification, could provide benefits to the human species in extraordinary circumstances. For example, asexual genetic replication could potentially save humans from extinction if all humans were

> rendered sterile by some catastrophic event. But no such necessity currently exists or is on the horizon.' (Annas, Andrews and Isasit 2002 p.153)

Unfortunately, the absolutist nature of this inconceivability clause, which when combined with the restrictive version of the precautionary principle results in little more than a *de facto* rejection of all posthuman endeavour, appears impossible to maintain consistently without it being predicated on a severe technological cynicism i.e., the belief that technological development is, by its very nature, detrimental rather than beneficial. Indeed, many of the so-called advantages of the posthuman appear to be based on *self-evident* claims. This has lead to a number of pertinent questions being overlooked; specifically, why does having a more powerful brain, or being able to live longer, run faster, jump higher etc., constitute advantage or improvement? If anything, the current level of human intelligence is already high enough to be a survival liability. For it has enabled humans to create extremely hazardous nuclear, chemical and biological substances and weaponry; and massive pollution, environmentally unsustainable lifestyles and enormous over-population. This intelligence has rendered the human the one species on the planet capable of, deciding to and succeeding in, killing every member of its own species and probably most others as well. Such ingenuity does not appear to be particularly advantageous, and this line of argument seems equally valid when applied to physiological enhancements. For even if they are successful they seem equally likely to hinder rather than benefit humanity.

Of course posthuman modernists, like those in the Extropy Institute, reject this position. They still follow modernist thinking, believing in perpetual progress, the triumph of reason, and ultimately human amelioration: 'Pursuing extropy means seeking continual improvement in ourselves, our cultures, and our environments. Perpetual progress involves improving ourselves physically, intellectually, and psychologically. It means valuing the perpetual pursuit of knowledge and understanding.' (More 2003) More continues by arguing that: 'If the precautionary principle had been widely applied in the past, technological and cultural progress would have ground to a halt. Human suffering would have persisted without relief, and life would have remained poor, nasty, brutish, and short: no chlorination and no pathogen-free water; no electricity generation or transmission; no X-rays; no travel beyond the range of walking.' (2004)

Unfortunately, no matter how reasonable this standpoint appears at first glance, the counterargument is that while conducting a synchronic examination of contemporary health issues may suggest that posthuman technologies may be beneficial, a diachronic examination exposes the fact that the vast majority of human health issues are as a direct result of First World industrialisation. As Capra argues:

'industrialised countries are plagued by the chronic and degenerative diseases appropriately called "diseases of civilization", the principal killers being heart disease, cancer, and strokes. On the psychological side, severe depression, schizophrenia and other psychiatric disorders

appear to spring from a parallel deterioration of our social environment. There are numerous signs of social disintegration, including a rise in violent crimes, accidents and suicides; increased alcoholism and drug abuse; and growing numbers of children with learning disabilities and behavioural disorders. The rise in violent crimes and suicides by young people is so dramatic that it has been called an epidemic of violent deaths. At the same time, the loss of young lives from accidents, especially motor accidents, is twenty times higher than the death rate from polio when it was at its worst.' (Capra 1983 pp.4-5)

If one actively generates health hazards and then *potentially* solves them through technology, should this be deemed more beneficial to humanity than simply refraining from generating them in the first place? More inadvertently highlights this point with his example: chlorination and pathogen-free water. Humans have survived for millennia without chlorinated water. The reasons why First World drinking water "needs" to be disinfected is due to the unsanitary characteristics of human communities, and because humans now have an underdeveloped immune system, ironically caused by disinfectant dependency. Ozone and chlorine disinfected water was introduced, during the late nineteenth and early twentieth centuries, in response to pathogen issues arising from water contaminated with human faecal matter. (USEPA 2000 pp.1-2) Chlorinated water is thus a paradigmatic example of human ingenuity solving a manmade problem.

It may in fact be argued that posthuman solutions to First World health issues can only offer, at best, parity with past levels of human wellbeing. If this is so, then it may seem reckless to gamble with potentially hazardous and irreversible technologies, when more prudent, but admittedly challenging and time consuming, social and cultural alternatives exist. The pertinent question here appears to be whether posthuman technologies would have offered tangible lifestyle improvements to, say, American, Australasian and African aboriginals prior to European colonialism? Hobbes who, unlike More, had lived through the English Civil War and lived during a period of general ignorance towards the life outside of Europe, may be forgiven his parochial comments regarding the nature of man outside the Leviathan, that is: 'continual fear, and danger of violent death; and the life of man, solitary, poor, nasty, brutish, and short.' (1651/1996 p.84)

This said those who advocate the posthuman often argue that human "enhancement" should be viewed using a self-evident, rather than universal, framework. Bostrom believes going beyond the current limits of human psychology and physiology is a shared human goal that equates to life improvement 'by any reasonable criteria'. (2007 p.5) Indeed, the "reasonable" majority would love to have a more powerful brain, or be able to live longer, run faster, jump higher etc., as argues Hughes:

'But people do know they want health, longevity, security and prosperity for themselves and their kids. When push comes to shove very few are eager to embrace sickness, disease, mental decline and

early mortality in order to avoid hubris or preserve the "humanness". So the constituency for a political ideology that promotes human enhancement includes the vast majority of the planet's people, rich and poor, religious and secular.' (2005 p.66)

Kass mockingly oversimplifies this thinking, perhaps justifiably, as: 'Life is good, and death is bad. Therefore, the more life the better'. (2004 p.262) Nevertheless, technological cynics will argue that it says more about the vacuous, instant-gratification lifestyles of most First World citizens than any considered opinion on the "good life". In fact due to the relative nature of our existence, any perceived advantage in increasing, for example, human lifespan, will be swallowed-up within a few generations. Instead of using these extra years to do the things current human never gets around to doing, the most likely consequence will be the spending of more time doing exactly the same things, only slower. Humans will spend longer at school, longer at university, longer at work etc.. As already stated, the life expectancy in the UK for a new born boy in 1901 was 45 years; in 1999 it was 75 years. (Hicks and Allen 1999 p.8) Has this extra life expectancy been utilised to its full potential? Will those born in the early twenty-first century have an ontologically superior life to those born in the early twentieth century? Will they necessarily achieve greater meaning, fulfilment, and self-worth? Do humans even celebrate the fact that they will on average live longer? Or does the knowledge simply pass them by, as they now expect to live longer? Unfortunately, the relativity of human existence is such that any fundamental change in ability will only seem fundamental for a short period of time, before it

becomes the norm. It may take a few extra generations to adapt to rapid change, but eventually, within a few generations, the momentous will becomes the banal.

In addition, cynics will highlight the seeming irresponsibility of allowing humans to determine their own evolutionary direction, citing the capricious nature in which past, present and probably future generations have, and will, define and re-define, what is good for civilised man. Human history is littered with allegories of possible futures that constantly fluctuate between the utopian and the dystopian. The paradigmatic example of this is Aldous Huxley's novel *Brave New World.* Published in 1932 – one year after his brother, renowned biologist Julian Huxley, wrote his *pro*-eugenic treatise *What Dare I think? – Brave New World,* also printed by Chatto & Windus, was far from the dystopian attack on future technoscience (especially eugenics) it is currently perceived to be. As Bradshaw notes in his introduction to *Brave New World*:

> '*Brave New World* has long been installed... as one of the principal dystopian or anti-utopian novels of the twentieth century. Its title is now a pervasive media phrase, automatically invoked in connection with any development viewed as ultra-modern, ineffably zany or involving a potential threat to human liberty. When Huxley wrote the novel, however, he had other things on his mind besides the "nightmarish" future.... Huxley's original purpose in writing *Brave New World* may well have been to satirise *Men Like Gods* and the fantastic, "Californian" world it depicted'. (2004 pp.vi-viii)

Indeed in the historical framework of the early 1930's, *Brave New World* can be read as having an optimistic portrayal of future genetic technology, where 'medical science has eliminated virtually all disease, together with the debilitating effects of old age.' (Carey 1999 p.447) This reading certainly seems compatible with the apparent similarities in Aldous' and his brother's advocacy for eugenics:

> 'Two weeks prior to the publication of *Brave New World*, in a talk broadcast on BBC Radio in January 1932, Huxley discussed the possible use of eugenics as an instrument of political control and expressed his readiness to sanction eugenicist measures to arrest the "rapid deterioration... of the whole West European stock".' (Bradshaw 2004 p.x)

However, many within both the intelligentsia and the social establishment, of the time, saw human eugenics as hold the imminent solution to a number of social issues. Fernández-Armesto notes:

> 'this was one of the orthodoxies of the age. In early Soviet Russia and parts of the USA in the same period, the right to marriage was denied to people officially classified as feeble-minded, criminal, and even (in some cases) alcoholic. By 1926, compulsory sterilisation of people in some of the categories had been adopted in nearly half the states of the USA.' (2005 p.153)

However the revelations of Nazi eugenics, its racial purity ethos and the mass exterminations of those deemed "unfit" to breed, was to undermine pro-eugenic enthusiasm. Soon *Brave New World* was reinterpreted as a prophetic attack on eugenic technologies. Of course some of this historicism may be in part attributable to the hindsighted representation of the original in Aldous' post-Holocaust book *Brave New World Revisited*:

> 'In his 1946 Foreword to *Brave New World* Huxley makes no reference to the appeal which planning and eugenics held for him at the time he wrote the novel. Hitler and the "Final Solution" had made all such ideas unthinkable and by then Huxley had long since forsaken them. Instead, the Foreword and *Brave New World Revisited* (1958) emphasise the novel's prophetic awareness of the "nightmarish" future which the hegemony of Soviet Communism seems to portent.' (Bradshaw 2004 p.xii)

Seventy years on, the ever increasing talk of cloning, embryo selection and genetic engineering etc., is again challenging human perceptions of reproductive enhancement. Indeed, to this end, *Brave New World* may soon return to being viewed as a positive representation of the efficacy of such technology.

While the arguments associated with technological cynicism and extreme precautionary principles may seem cogent, lucid and persuasive, it seems rather

impractical, if not fanciful to believe humanity is ever likely to reverse the direction of its lifestyle and return to a pre-technological era. This said certain environmental issues may become severe enough to result in a partial reining-in of technoscience.

However such results are likely to be a pyrrhic victory for those who have appropriated the precautionary principle as an absolutist method of halting posthuman development. For if the principle is to be deemed as more than simple arbitrary protectionism, it will need consistence of application, being applied to *all* new technologies, not just the posthuman. Yet unlike many radicals within the environmental movement, the idea of abandoning large swaths of agricultural, commercial, medical and future-technologies research, simply because they fail to meet the precautionary principle will seem abhorrent. This is because Annas *et al.* are, paradoxically, libertarian humanists who advocate unconstrained free-market technological progress. Their co-opting of the precautionary principle is simply an attempt to halt an individual technology they find objectionable. This being the case, Annas has been forced to counter accusations of arbitrary and inconsistent application by explaining why posthuman endeavour should be singled-out for "special treatment":

> 'In fact, cloning and inheritable genetic alterations can be seen as crimes against humanity of a unique sort: they are techniques that can alter the essence of humanity itself (and thus threaten to change the foundation of human rights) by taking human evolution into our own

> hands and directing it towards the development of a new species, sometimes termed the "posthuman".' (Annas, Andrews and Isasit 2002 p.153)

Unfortunately Annas's strategy is little more than hanging the legitimacy of one argument on the inferred legitimacy of others i.e., there is such a thing as human essence, that it is threatened by posthuman technologies, and that it is worth protecting. These arguments, as already demonstrated, appear more than a little suspect.

CHAPTER V

BEYOND HUMANISM

Accepting the Mortal Flesh

Novel: *Infinity Welcomes Careful Drivers* (1989)

The year is 2179 and indolent waster "Dave Lister" awakes to find himself slumped across a table in a McDonald's burger bar on Mimas, one of Saturn's moons. The last thing he can remember is celebrating his twenty-fourth birthday with a Monopoly board pub-crawl of London with six of his very closest friends.

Six months later and having only managed to save fifty-three of the eight hundred dollarpounds he needs to buy a shuttle ticket back to Earth; Lister has a stroke of genius. He will join 'the Space Corps, get on an Earth-bound ship and as soon as he gets home: thank you, goodnight. Lister, David, AWOL.' (Grant and Naylor 1992 p.33) The only flaw in this plan is that the ship Lister gets assigned to, the "Red Dwarf", will take him

to Earth, but only after it has first mined ore from Triton, a process that will take approximately four-and-a-half-years.

Some months later, Lister, in a desperate attempt to escape the monotonous routine of life onboard ship, intentionally breaks quarantine regulations by smuggling aboard and hiding a show cat named "Frankenstein". The 'smallest, healthiest animal with the best pedigree he could find... inoculated for every known disease, to ensure that she didn't actually endanger the crew'. (Grant and Naylor 1992 p.89) Then having gotten himself deliberately caught, Lister is sentenced to the statutory punishment of three years in a stasis booth, suspended in time, without pay.

A subjective instant later Lister is released from stasis by the ship's computer "Holly" to the news that 'Everybody's dead, Dave'. (Grant and Naylor 1992 p.98) It transpires that after Lister was placed into stasis the ship suffered a catastrophic cadmium II radiation leak. In the fifteen nanoseconds Holly had to react to this, he managed to seal off as much of the ship as possible and set the drive computer to accelerate Red

Dwarf out of the solar system in an attempt to avoid spreading nuclear contamination. However, there was little he could do to save the crew, all of whom had died in the accident with the exception of Lister, who Holly had kept in stasis until the radiation had reached a safe background level. This process has taken three million years.

The situation for Lister seems rather bleak; he is alone on a gigantic mining ship three million years into deep space and is now probably the last human in existence. This said Red Dwarf's mainframe can generate a single crewmember hologram and so, in an attempt to stop Lister slipping further into insanity, Holly decides to generate a hologram of Lister's insufferable, cowardly and anal-retentive workmate: "Arnold J. Rimmer".

On reopening the radiation seals to the cargo decks, Holly notices a non-human life form and sends Lister and Rimmer to investigate. Here they find "Cat", a vain dim-witted feline humanoid, who is apparently the last onboard evolutionary descendant of the evidently pregnant Frankenstein.

Soon afterwards the Red Dwarf receives a distress signal from the ship "Nova 5" and rescues the last remaining crewmember, a sanitation droid called "Kryten". Lister learns from Kryten that the Nova 5 has a Duality Jump drive system that could transport it to Earth in approximately three months. Also capable of sustaining one hologram, the Nova 5 is fuelled and crewed by the Red Dwarf members, and a course is set for Earth.

Two years later, and the "space adventurers" are enjoying a gratifying life back on Earth. However fame and its associated fortune have affected the crew differently. Lister seeks peaceful anonymity and settles down in a backwater town in the American mid-west. Rimmer puts his money into developing the "Solidgram" a solid body to house a hologram. These sell in such quantities that he is now one of the three or four richest men in the world. Cat on the other hand lives in opulent seclusion on a Danish island.

This said Lister's life has developed one minor inconvenience; both his forearms have become

excruciatingly painful. In an attempt to easy this he applies some cream and is shocked, and perplexed, to find the word "DYING" written in pain across his arm. However, in time, the message changes to read "U=BTL". Unfortunately, Lister understands this message and sets off to round-up Rimmer and Cat.

"Better Than Life" is an illegal brain implant, a deadly game offering a cripplingly addictive hallucinogenic nirvana. A computer-induced alternative reality where a player's fantasies are played out, whist he is kept oblivious of the outside world and ignorant of having entering the game. 'Not one person ever entered the Game without believing he could take it or leave it. Only inside, few ever made the painful journey back to reality.' (Grant and Naylor 1992 p.295)

Suddenly Kryten appears and recounts how, after fuelling the Nova 5, the Cat had found a stash of smuggled BTL games aboard Red Dwarf, and how, having started playing, both Lister and then Rimmer had followed the Cat into the game in a vain attempt at rescue. During this time, he had attempted to care for his helpless crew members, but as the situation became

more desperate, had taken to lasering warning messages into Lister's arms. Apparently unsuccessful, in this attempt to extract them from the game, Kryten eventually decided to enter the game himself.

Now inside the game, Kryten explains that to leave, firstly, a player must want to leave, and secondly, he must find his own exit located somewhere within his own fantasy.

Back in the American mid-west village his subconscious had copied from the film *It's a Wonderful Life*, Lister finds his exit and ponders leaving his wife and children: 'What harm was one more day? He turned away from the dissolving exit and crunched up the drive to 220. One more night of that pinball smile. Just one. He couldn't leave them on Christmas Eve. But, of course, in Bedford Falls it was always Christmas Eve…' (Grant and Naylor 1992 p.298)

Whilst contemplating human happiness both Smart (1973) and Edwards (1979) refer to a set of behavioural experiments carried out on rats by Olds and Milner in the 1950's. The experiments centred on the artificial stimulation, via implanted

electrodes, of pleasure centres within the brain. Having achieved this, Olds and Milner then ceded control of the resultant "pleasure device" to the rats, via a lever, and then studied the animals' behaviour. Edwards' summarises the results:

> 'Male rats that have been taught to turn on the electricity by pushing a lever seem to prefer this source of happiness to any now standard sources of ratty pleasures. They will press the lever to the point of physical collapse in preference to eating and drinking, and even in preference to copulating with an available female rat in heat.' (1979 p.60)

To illustrate the sheer extent of hedonistic lever pressing, Olds and Milner noted that in one particular set of experiments, rat "A-5" pressed the lever 'at 1920 responses an hour; that is, about one response for every 2 sec.' (1956 p.425)

The results of these behavioural experiments inspires Smart to visualise: 'a pleasant picture of the voluptuary of the future, a bald-headed man with a number of electrodes protruding from his skull, one to give the physical pleasure of sex, one for that of eating, one for that of drinking, and so on.' (1973 p.19) While Smart seems to envisage the occasional recreational plugging in and out of this pleasure device, analogous to that of the "Penfield Mood Organ" in *Do Androids Dream of Electric Sheep?* (Dick 2004 p.3), Edwards takes the idea a step further, postulating:

'Suppose that we knew how to sustain life and awareness for years and years with little or no physical exercise. If we had a chance, under those conditions, to consign ourselves to a hospital bed attached to a well-placed set of electrodes for the next fifty or sixty years of our life, but with no other type of human activity, experience, or fulfilment, would we take it?' (1979 p.60)

Of course both Smart's and Edwards' pleasure devices fail as "all things being equal" hypotheticals, as their conceptions are constrained by, what was for them, contemporary technical conceivability. Nozick however manages to break from the mental straightjacket of technical conceivability, and by adapting Descartes' methodological scepticism – specifically his concept of the *malin génie* or "evil demon" (1641/1999 §12 p.15) – develops, the already mentioned, "experience machine" scenario:

'Suppose there were an experience machine that would give you any experience you desired. Superduper neuropsychologists could stimulate your brain so that you would think and feel you were writing a great novel, or making a friend, or reading an interesting book. All the time you would be floating in a tank, with electrodes attached to your brain. Should you plug into this machine for life, preprogramming your life experiences?... Of course, while in the tank you won't know that you're there; you'll think that it's all actually happening.... Would you plug in?' (Nozick 1974 pp.42-43)

The thought experiments of Smart, Edwards and Nozick are ultimately designed to explore certain questions appertaining to the meaning of human existence, specifically: 'What does matter to us in addition to our experiences?' (Nozick 1974 p.43) Is there point, meaning and/or anything of intrinsic value to life outside of the self, or is it the case that:

> 'the world we live in and seem to know has no ultimate reality, and that our attachment to it is an attachment to an illusion. Reality itself has neither name nor form, and what has name and form is but a painful dreaming from which all reasonable men would wish to escape if they knew the way and knew that their attachment was to nothingness. Life is without sense and point, there is a ceaseless alternation of birth and death and birth again, the constantly turning wheel of existence going nowhere eternally; if we wish salvation, it is salvation from life that we must seek.' (Danto 1968 p.28)

The resultant conclusions of each thought experiment proponent is illuminating. Nozick's standpoint is: 'We learn that something matters to us in addition to our experiences by imagining an experience machine and then realising that we would not use it.' (1974 p.44) The reasons for rejecting the experience machine, Nozick believes, are threefold. Firstly, 'we want to *do* certain things and not just have experiences of doing them'. Secondly, 'we want to *be* a certain way, to be a

certain sort of person'. Thirdly, we would not want to be limited to 'a world that is no deeper or more important than that which people can construct.' (1974, p.43)

In contrast Edwards holds that: 'As idealist philosophers have always insisted, the concrete world of everyday experience would be no less reliable or interesting if caused by God than by matter, as common sense assumes.... In practice, however, the electrodes simply cannot do what God can do; and there we shall probably have to leave it.' (1979 p.67)

Smart's position is somewhat more equivocal, questioning: 'Now is this the sort of life that all our ethical planning should culminate in?... Surely not. Men were made for higher things, one can't help wanting to say, even though one knows that men weren't made for anything, but are a product of evolution by natural selection.' (Smart 1973 p.19)

While these thought experiments were initially little more than philosophical devices: 'We are infinitely far removed from being able to create such a qualitatively hedonistic paradise electronically' (Edwards 1979 p.67), it has been argued that recent technological developments have made the creation of analogues human/computer simulations only a matter of time (Bostrom 2003d), possibly only a matter of decades. (Smith 2005) Indeed the emergence of such technologies appears to have provoked the creation of an array of science fiction narratives, which have set out to represent and explore the social and psychological effects of having such posthuman technologies.

Writing in a social climate that has changed somewhat since the seventies, these narratives have challenged the: 'Theologians and humanists [who] go to the length of devoting book after book to "the conquest of nihilism". Their solutions vary from a return to Calvin to the glorification of "the spontaneous affirmation of life".' (Goudsblom 1980 pp.140-141) Gone is the idea providence, 'the City of God – the most perfect possible state, under the most perfect of monarchs.' (Leibniz 1714/1998 §85 p.280) Gone also is the tacit modernistic optimism, the sense of reverence toward a universal project, an amoral science working with reason towards human amelioration. In its place is cynicism, relativism, systemic individualism, the rejection of metanarratives and despondency at the meaninglessness of First World consumerism.

In a world where technology is playing an ever increasing role in leisure and pleasure time, the conviction in the inconceivability of a rational person preferring simulation rather than reality seems antiquated. Indeed, the actions of many seem to suggest Western cultures have transcended the question altogether, the pertinent issue now being, if such technology is developed, what will be the extent and pervasiveness of its use?

Infinity Welcomes Careful Drivers can be seen as an allegory for man's post-industrial condition. Focusing on the loneliness experienced by the last surviving members of the Red Dwarf, it highlights both the pointlessness and monotony of decadent life and the escalating social isolation via technological dependence. It

appears more than simple coincidence that the personalities of the four main characters symbolise contemporary society personified i.e., the indolent waster, the self-indulgent neurotic, the superficial narcissist and the mindless conformist.

This said it is only after the accident, the radiation leak, and the death of the rest of the crew, when the *self* enforced structure of employment is broken, that the protagonists suffer the full revelation of their decadency. As a slogan of the Paris demonstrations of May 1968 states: 'Nous ne voulons pas d'un monde où la certitude de ne pas mourir de faim s'échange contre le risque de mourir d'ennui' – we want nothing of a world in which the certainty of not dying from hunger comes in exchange for the risk of dying from boredom. (Tang 2006) From this standpoint, the crew's decision to plug themselves into the total immersion game "Better Than Life", the novel's equivalent to the experience machine, seems to be the perfect means of escaping the banalities of reality.

Better Than Life is ontologically more sophisticated than the experience machine, as it allowing for notions of desire and happiness beyond Nozick's seemingly naïve conception (or beyond what he is willing to admit). The game acknowledges that humans gain pleasure from such things as deferred gratification, abstinence, masochism, delusion, pain etc., and can even deliver fulfilment when neurosis dictates that this can only be achieved by withholding fulfilment. As Rimmer ponders:

'Could he really have fantasised this woman?... But having got her, why would he then fantasize she was unfaithful? With Hugh the hairy-shouldered pool attendant! What the hell did that say about the state of his mind? Mentally unwell, that's what it said. And why had he fantasised his wife's refusal to make love with him for the past eighteen months?... He moaned softly. The innards of his psyche were there for all to see: putrid and rotten and rancid. His neuroses parading like grinning contestants in the Mr. Universe contest!' (1992 p.284)

Once inside Better Than Life the Red Dwarf crew exist happily for 'two years' (1992 p.261) before Kryten's attempted intervention. This is a curious timeframe as the game is opened ended and Kryten can enter at any time. It may be homage or simple coincidence, but Nozick writes of the experience machine: 'After two years have passed, you will have ten minutes or ten hours out of the tank, to select the experiences of the *next* two years.' (1974 pp.42-43)

The problem with Better Than Life is that it is so good at illusion and gratification that it appears implausible that anyone would wish to leave. So the conundrum becomes how to make the characters aware of their fate. The mechanism used is that the game cannot sustain the life of the gamer. However, the plausibility of this proposition can only be maintained if it is assumed that Better Than Life is unintentionally addictive, having been developed as a recreational game rather than an alternative reality machine analogous to the experience machine. The crux here is that whilst humans have yet to develop the analogous interface and

simulation technology, they have 'already developed the life-support technology needed to keep a biological body (and mind) alive while computer interfaced.' (Smith 2005 p.336)

It will be argued that rationally choosing to connect to such a machine, an agent must not only participate in a process of conceiving and evaluating *credible* outcomes, but also possess the ability to transcend any immediate displeasure associated with leaving their present reality. Smart argues: 'Maybe from tomorrow onwards, once the electrode work has started, we should be perfectly contented, but we are not contented now at the prospect.' (1974 p.21) This may be due to attachments to things left behind, even though moments later such things will either be forgotten or reappear inside the game. Or simply because 'I should be annoyed today if told that from tomorrow onwards I should be an electrode addict, even though I knew that from tomorrow onwards I should be perfectly happy.' (Smart 1974 p.12) However a decision *not* to connect to an alternative reality machine made on the basis of hyper-scepticism or hyper-cautiousness cannot be seen as a declaration in favour of life outside the machine, but rather an inability to conceive of, or an unwillingness to participate in, the parameters of the thought experiment.

Infinity Welcomes Careful Drivers circumvents these issues by withholding, initially at least, the fact that the crew have connected to Better Than Life. This plot device serves to facilitate a fuller participation in the illusion and enables greater input and insight than that offered by a linear thought experiment. When

the crew's game playing is finally revealed, the juxtaposition of being stranded alone on a spaceship three million years into deep space, compared with the quality of life offered by the game, throws into disarray the knee-jerk assumption that "reality" must be self-evidently preferable to a simulation.

Having done so it becomes all to easy to empathise with Lister's position and his inability to leave the game, for it seems obvious that the life and relationships he has developed within Better Than Life offer him greater value and pleasure than those on Red Dwarf. Nozick's issues of *doing*, *being* and *belonging* to a world beyond experience, appear of little value to Lister's predicament. In fact it is evident that the game has lived up to its epithet, life within it is clearly: better than Lister's life outside of it. Without the issue of life-support, it seems hard to imagine many in Lister's position would wish to leave the game; and some, like Lister, would be willing to stay even if it ultimately kills them.

Infinity Welcomes Careful Drivers examines widely held and generally unquestioned assumptions regarding ontology, human psychology, posthuman technology and the value of life. However, in doing so it may have become a cautionary tale for both detractors and champions of posthuman technologies. This is because the narrative appears to have stumbled across a potentially crippling obstacle to future posthuman development, the possibility that man is ill-equipped, or even incapable of transcending egoism, relativism and base desires. As Gazzaniga argues in the opening paragraph of the provocatively entitled article: *What Are Brains For?*:

> 'Sex. Indeed, I would argue that the cathedral we build, the books we read and write, the science we create, the cars we drive, the stocks we buy and sell, all of the mergers, the politics, and the wars we wage – in short, everything that constitutes the intricate web of life that we have constructed around ourselves with our amazingly large brains – serves a very simple purpose. Sex.' (1997 p.157)

Far from being a transitionary phase towards the posthuman, the coupling of brain to CPU might create the ultimate addiction, the zenith of personal fulfilment, and the death of all impetus towards the posthuman project; and any other project for that matter. Ironically while Goldenberg argues: "We are, I think, engaged in a process of making one another disappear by living more and more of our lives apart from other humans, in the company of machines" (1993 p.11), total immersion simulations analogous to Better Than Life may be both the ultimate cause of, and the ultimate solution to, social isolation.

The Posthuman as Existential Aspiration

Novel: *The Hitchhiker's Guide to the Galaxy* (1979)

Affable pillock "Arthur Dent" is having a bad Thursday. Firstly, he has been trying desperately to come to

terms with the fact that his house is scheduled for demolition to make way for a local bypass. This being something he first became aware of only the day before, despite the fact that the bypass plans had been on display, for the last nine months, in the cellar of the local planning office. Or more specifically 'on display in the bottom of a locked filing cabinet stuck in a disused lavatory with a sign on the door saying *Beware of the Leopard.*' (Adams 1979 p.12) Secondly, "Ford Prefect", one of Dent's closest friends, has just asked him: 'How would you react if I said that I'm not from Guildford after all, but from a small planet somewhere in the vicinity of Betelgeuse?' (Adams 1979 p.23) Thirdly, his home planet, the Earth, has just been destroyed by an alien race, the "Vogons", to make way for a hyperspace express route, something which came as a great surprise to most of the Earth's inhabitants, this even though, as the "Prostetnic Vogon Jeltz" of the Galactic Hyperspace Planning Council explained: '*All the planning charts and demolition orders have been on display in your local planning department in Alpha Centauri for fifty of your Earth years.*' (Adams 1979 p.31)

Meanwhile, on the opposite spiral arm of the Galaxy "Zaphod Beeblebrox", President of the Imperial Galactic Government, is participating in the naming ceremony of the new Improbability Drive prototype spaceship: "The Heart of Gold". All is going swimmingly, until the ship is unveiled, at which point stupefied Beeblebrox utters: 'That is really amazing.... That really is truly amazing. That is so amazingly amazing I think I'd like to steal it' (Adams 1979 p.38), and then proceeds, in a moment of crazed incontinence, to grab "Trillian" his latest girlfriend and act on his impulse.

Dent, who up until a few minutes ago believed humans were the only intelligent life in the Galaxy, now finds himself and Ford aboard the Vogon ship that has just destroyed the Earth. It transpires that Ford has managed to hitch a lift, vicariously, via a matter transference beam, and the generosity of the Vogon's "Dentrassi" cooks. Although not as precarious as having been left to melt into space along with the Earth, once the Vogon Captain learns of Ford and Dent's arrival their stay onboard is both unpleasant and short; for unlike the Dentrassi, the Vogons are '*one of the most unpleasant races in the Galaxy - not actually evil, but*

bad tempered, bureaucratic, officious and callous.'

(Adams 1979 p.45)

Ejected into open space, unprotected Dent and Ford expect to live no longer than thirty seconds. However seconds later, they are rescued by Beeblebrox and Trillian, or more specifically by the spaceship they are piloting. This highly improbable act occurred as a result of The Heart of Gold's improbability drive, which, when engaged, causes it to 'pass through every point in the Universe'. (Adams 1979 p.79)

Soon The Heart of Gold is in orbit around its destination the planet "Magrathea", which is apparently 'some kind of legend from way back which no one seriously believes in. Bit like Atlantis on Earth, except that the legends say the Magratheans used to manufacture planets.' (Adams 1979 p.92)

Having safely, although somewhat fortuitously, navigated the planetary automated defence system and landed on the surface; Trillian, Ford and Beeblebrox set out to explore what they assume to be the uninhabited remnants of the Magrathean subterranean

settlements, whilst Dent and "Marvin" the "paranoid android" are told to guard the entrance, from whom Beeblebrox has not entirely made clear.

Bored and depressed with Marvin's conversation, Dent wanders off, only to be startled by the appearance of native "Slartibartfast" who explains that the Magratheans have recently been tasked with building the "Earth Mark Two" and are 'making a copy from the original blueprints.' (Adams 1979 p.123) Dent's surprise at this revelation then transforms into astonishment when he is further informed that the planet was originally commissioned, paid for and run by mice. However this then slides into incredulity when Slartibartfast continues by explaining that mice are 'hyperintelligent pan-dimensional beings. Your planet and people have formed the matrix of an organic computer running a ten-million year research programme'. (Adams 1979 p.125)

In a critical piece of exposition it is revealed that, many millions of years ago, a race of hyperintelligent pan-dimensional beings became so frustrated with the constant bickering about the meaning of life, they

built a stupendous supercomputer: "Deep Thought", to solve the problem once and for all. Having asserted that there is a simple answer to "the Ultimate Question of Life, the Universe, and Everything", Deep Thought explains it will take some time to calculate the answer, approximately seven and a half million years.

Seven and a half million years later Deep Thought announces it has calculated the answer to the "Great Question", but that it is not going to be liked. Reluctantly the super computer declares: 'The Answer to the Great Question... of Life, the Universe and Everything... is... forty-two.' (Adams 1979 p.135)

In an attempt to placate his contemptuous audience, Deep Thought suggests that the unsatisfactory nature of the answer has probably arisen from no-one having ever known what the question actually was. Deep Thought then offers a potential solution, that is the building of a new and even more complicated super computer: 'A computer which can calculate the Question to the Ultimate Answer, a computer of such infinite and subtle complexity that organic life itself shall form part of its operational matrix.... And it shall be called...

The Earth.' (Adams 1979 p.137) The upshot of this is that Deep Thought designs the Earth, the Magratheans build it, humans live on it and the Vogons destroy it five minutes before the programme was completed.

Slartibartfast then takes Dent to meet the mice, where he is reunited with Trillian, Ford and Beeblebrox. It is now explained to Dent that the mice may be able to circumvent the necessity of building a second Earth because 'there's a good chance that the structure of the question is encoded in the structure of your brain.' (Adams 1979 p.149) At this point, they offer to buy Dent's brain off him. Ford exclaims that he thought they were offering to read his brain electronically, to which the mice reply: 'Oh yes... but we'd have to get it out first. It's got to be prepared. Treated.... Diced.' (Adams 1979 pp.149-150)

Having rejected their kind offer, the meeting is rudely interrupted by the Police, who have finally caught up with Beeblebrox. Escape seems impossible, that is until the police officers' spacesuits malfunction as a result of their spaceship committing suicide, having spent too long in conversation with Marvin. Back on The Heart of

Gold, Beeblebrox and his extended crew set course for the Restaurant at the End of the Universe.

In a paradoxically move, *The Hitchhiker's Guide to the Galaxy* appears to recreate the modernist *telos* of secular man, the ultimate search for knowledge, and then seeks to undercut the highfalutin assumptions surrounding such a task and man's role within it. It does this firstly by challenging man's self-confidence, specifically by positing that 'human beings were only the third most intelligent life form present on the planet Earth' (1979 p.104) behind mice and dolphins. Secondly, it expels the mysticism surrounding existence. Earth and the life on it are not the creation of God, or accidents of nature, but intentional entities, designed and built to form part of a biological computer created to calculate the Question to the Ultimate Answer. Thirdly, instead of leading the search for knowledge, man's role is that of a simple component, an element of "organic life" that has formed part of its operational matrix. Indeed it is the mice that will 'go down into the computer to navigate its ten-million-year program!' (1979 p.137)

Whilst ridiculing the self importance man has attributed to himself, the novel also satires his creation myths, by creating a seemingly ridiculous alternative that, within the realms of contemporary scientific thinking, is more lucid and cogent than theist mythology. Nevertheless, it is possible to interpret the narrative as proffering "relative" deism: Deep Thought being the god that creates "nature", in the terms of Earth and life on it, and then leaves it to its own devices. Or even

polytheism, the mice are the gods that created Deep Thought and thus the *de facto* creators of the Earth, and are immanent within the planet. Indeed, the narrative does not explicitly rule-out the possibility of a being beyond the mice or Deep Thought. However, the creator of the Earth is clearly not the highfalutin omnipotent, omniscient, all-benevolent being of the Christian faith, and the human is little more than a biological cog of a much larger and more important project.

By positioning man as merely a component of an organic computer, *The Hitchhiker's Guide to the Galaxy* draws attention to the similarities between this position and his status as an evolving biological machine within neo-Darwinism. Similarly by placing hyperintelligent pan-dimensional beings, in the form of mice, also on the planet, it ridicules anthropocentricity as little more than speciesism. Indeed, by having the mice logically reason that Dent's brain is little more than an artefact of the computer programme i.e., analogous to a mere product of evolution, this highlights the question of human autonomy, and whether it is compatible with scientific laws, computational or evolutional.

However, *The Hitchhiker's Guide to the Galaxy* does more than make subtle sideswipes at the abilities, hubris and incongruous self-perception of those outside of the narrative. It also highlights how the human residents of planet Earth (the organic computer) are commensurate with the posthuman. That is, they possess a number of important characteristics normally associated with the posthuman rather than the human. Examples include, they are a product of utility, a means to

an ends rather than an end in themselves. Their minds are interconnected in some fashion, forming part of a collective, a shared consciousness capable of processing a computer programme. The information on their brains can be extracted digitally. Their intelligence not only lacks unique or ontologically exceptional components, but is also a form of biological "artificial" intelligence. Although they have the illusion of autonomy, as biological machines their brains are *not* capable of creating new causal chains of events and therefore their thoughts and actions are determined solely by physical laws. They are perceived, from the standpoint of the mice, as artificial, a technological creation, and a form of information.

Having highlighted the posthuman nature of man, as computer component, and then surreptitiously associated it with the similarities in perceiving the Earth and its inhabitants as an organic computer and that of scientific materialism; it becomes difficult to sidestep questions of whether humans, outside of the narrative, are already posthuman.

For Bruce Mazlish, viewing the human as little more than a biological machine is a necessary element of transcending the "fourth shock" to the human ego – the other three being: Copernicus' proofs for Heliocentrism, Darwin's evolutionary theory, and Freud's psychoanalysis. (1993 p.3) Mazlish argues:

'My thesis, then, is that humans are on the threshold of decisively breaking past the discontinuity between themselves and machines. This thesis consists of two parts. On one hand, humans are ending the

discontinuity because they now can perceive their own evolution as inextricably interwoven with their use and development of tools, of which the modern machine is only the furthest extrapolation. We cannot think realistically any longer of the human species without a machine. On the other hand, the discontinuity is being bridged because humans now perceive that the same scientific concepts help explain the workings of themselves and their machines'. (1993 p.6)

It is Mazlish's belief that this coming to terms with the ultimate nature of the human, as biological machine, is an essential step if man wishes to have a healthy relationship with his technoscience:

'As I have suggested, this change in our metaphysical awareness, this transcendence of the fourth discontinuity, is essential to our harmoniously coming to terms with an industrial world. The alternatives are either a frightened rejection of the Frankenstein monsters we have created or a blind belief in the "superhuman virtues" and a touching faith that they can solve all our human problems.' (1993 p.7)

The fact that humans are already on the cusp of this paradigm shift leads Mazlish to the conclusion that technology is unlikely to threaten the human, or humanity. However Mazlish's confidence appears misplaced, for it is the compatibility between man and machine that will ultimately facilitate the development of the

posthuman. As Moravec states of uploaded minds: 'I consider these future machines our progeny, "mind children" built in our image and likeness, ourselves in more potent form. Like biological children of previous generations, they will embody humanity's best chance for a long-term future. It behoves us to give them every advantage and to bow out when we can no longer contribute.' (1999 p.13)

The problem with Mazlish's theory seems to be that it projects beyond its supposed target, failing to acknowledge why humans participate in science and technology, and why it is currently perceived as offering either salvation or damnation.

White declares: 'One thing is so certain that it seems stupid to verbalise it: both modern technology and modern science are distinctively Occidental.' (1967 p.1204) The reason for this, White believes, has its origins in the vehemently anthropocentric nature of the Christian faith: 'Our daily habits of action, for example, are dominated by an implicit faith in perpetual progress which was unknown either to Greco-Roman antiquity or to the Orient. It is rooted in, and is indefensible apart from, Judaeo-Christian theology.' (1967 p.1205) White continues by arguing that: 'Especially in its Western form, Christianity is the most anthropocentric religion the world has seen.' (1967 p.1205) Indeed, the idea that God created man, in his own image, and then placed him as the ruler over the Earth, generates a twofold catalyst. Firstly, there is the implication that man is ontologically similar to God and thus might be able to understand and gain access to the mind of God, beyond the limits of the Bible, through the examination of God's creation: 'By relation, God had given man the Bible, the Book of Scripture.

But since God has made nature, nature also must reveal the divine mentality. The religious study of nature for the better understanding of God was known as natural theology.' (White 1967 p.1206) Secondly, because everything on Earth, that was *not* man, was deemed mere utility, the process of examining and then utilising, that which was not man, could be conducted with an unparallel irreverence.

The function of a religion is one of political philosophy. The success of any social grouping is dependent on its ability to motivate individuals to act contrary to their self-interest, for the greater good of the community. Whilst in most contemporary societies the law represent the workhorse behind this process, this system needs protection from constant challenges to its validity. This protection can be achieved via different methods for example, threat of force, appeals to ideology, and through coercion via the creation of an unchallengeable moral authority.

The Christian faith functions as the grounding for a system of social rules, with the Bible as its rulebook i.e., a set of parables designed to be taught as dogma in order to indoctrinate individuals in how they *should* live their lives. However, because man writes the rules of any religion they are temporally indicative. Indeed, it is evident from such things as the Ten Commandments that the Bible was written exclusively for consumption by a subjugated audience. This, in stark contrast to social rulebooks for the power elite, such as Aristotle's *Nicomachean Ethics* (350BCE/1976) which deals with such diverse topics as magnificence (Bk.IV §ii pp.149-153), conversational qualities (Bk.IV §vii pp.167-169), and the political sciences. (Bk.VI §vii pp.213-215)

However, while the normative nature of social rules renders them unfalsifiable; as Hume argues:

> 'In every system of morality, which I have hitherto met with, I have always remark'd, that the author proceeds for some time in the ordinary ways of reasoning, and establishes the being of a God, or makes observations concerning human affairs; when all of a sudden I am surpriz'd to find, that instead of the usual copulations of propositions, *is*, and *is not*, I meet with no proposition that is not connected with an *ought*, or an *ought not*. This change is imperceptible; but is however, of the last consequence. For as this *ought*, or *ought not*, expresses some new relation or affirmation, 'tis necessary that it shou'd be observ'd and explain'd; and at the same time that a reason shou'd be given, for what seems altogether inconceivable, how this new relation can be a deduction from others, which are entirely different from it.' (1739/2003 Bk.III part.1 §.1 para.27 p.302)

It was the ontological claims, those that form the foundation of its declared authority, that have been undermined by its progeny, rigorous scientific method:

> 'Inevitably, natural philosophers concentrated on what alone natural philosophy could reveal, God the Creator, and they did so increasingly

as the scientific revolution progressed. Just as inevitably, given the thrust of the new conception of nature, they found a God who revealed Himself in immutable laws and not in the watchful care of personal providence or in miraculous acts.... Because the Scientific Revolution occurred in a society dominated by religious concerns, it could not avoid such matters. Its net effect was to question those aspects of Christianity that distinguished it from theism. It remained for a future age, drawing on the same intellectual source, to question theism as well.' (Westfall 1986 p.234)

The irony is it was Christian natural philosophers, such as Galileo, Newton and Darwin, who were pivotal in the undermining of the Bible's factual assertions. It should be noted that of these three, only Darwin lost his religion.

There is of course debate as to the extent of this conflict. Noble claims: 'Only during the last century and a half or so has this tradition been temporarily interrupted – or, rather, obscured – by secularist polemic and ideology, which has greatly exaggerated the allegedly fundamental conflict between science and religion' (1999 p.4), and Lindberg and Numbers argue: 'Conflict arose, not between science and religion as such, but within the individual minds experiencing a "crisis of faith" as they struggled to come to terms with new historical and scientific discoveries.' (1986 p.8) Nevertheless scientific rationalism eventually undermined the Christian faith and in doing so supplanted

a religious *telos* with a secular one, marking a new era of self-confidence in the abilities of man.

Indeed, gone was the innate sinfulness of man's existence and his need to gain redemption and access to eternal peace in heaven; and in its place, a secularised project of human amelioration through reason and knowledge. Yet in the process of dispelling theism, secularists spread, and started to believe, their own propaganda and deluded themselves that their success over God was of ontological importance, rather than a wholly terrestrial victory over differing political ideologies. This oversight resulted in man failing to question whether he should relinquish his Christian title as earth's most important being. Anthropocentric theism gave way to secular humanism, and scientific method continued in the same human centred fashion as it had been under scripture.

Having failed to have his moment of ontological clarity, man added insult to injury by deluding himself that amelioration through knowledge and reason was a material reality rather than an existential fiction. Having set himself up for a fall, man then embarked on the process of systematically undermining his new and self-appointed *raison d'êtra*.

Lyotard argues: 'Simplifying to the extreme, I define postmodern as incredulity towards metanarratives.' (1984 p.xxiv) Having inflicted *The Voyage of the Beagle* on the theist metanarrative, it took a little under one hundred and fifty years for scientific endeavour to wield an analogous deathblow to the metanarrative of

modernity. However in doing so, man lost not only the belief that rational thought, allied to scientific reasoning, would lead inevitably towards social and ethical progress, but also the self-confidence he had, admittedly erroneously, attributed to himself having banished theism.

The rejection of metanarratives renders *all* life, including human, without point or meaning. Whilst this is not a new thesis, its philosophical history can be traced back through Eastern philosophy and the relativism, scepticism and pragmatism taught by the sophists of Ancient Greece; revisiting a world without a *telos* after the conceited self-confidence of modernity and the Christian faith, has resulted in a period of social malaise.

In response to this many anthropocentrics, both theist and secular, believe the obvious solution is to regain meaning and self-confidence by retuning either to theism or modernity. However Gray attacks such thinking as fanciful and ultimately doomed:

> 'Religious fundamentalists see the power of science as the chief source of modern disenchantment. Science has supplanted religion as the chief source of authority, but at the cost of making human life accidental and insignificant. If our lives are to have any meaning, the power of science must be overthrown, and faith re-established... [they] see themselves as having remedies for the maladies of the modern world. In reality they are symptoms of the disease they

pretend to cure. They hope to recover the unreflective faith of traditional cultures, but this is a peculiarly modern fantasy.... Scientific fundamentalists claim science is the disinterested pursuit of truth. But representing science in this way is to disregard the human needs science serves.... Today, only science supports the myth of progress. If people cling to the hope of progress, it is not so much from a genuine belief as from fear of what may come if they give it up. The political projects of the twentieth century have failed, or achieved much less than they promised.' (2003 pp.18-19)

Interestingly, the posthuman debate can be seen as emblematic of the struggle to reassert anthropocentrism; regaining meaning and self-confidence either by revisiting man as the image of God, or man as ameliorating through scientific endeavour.

For Kass, meaning is to be found in spiritual wisdom, God's presence and redemption; and happiness, in the fulfilment of goals towards which our souls "naturally point". Salvation from meaninglessness is thus achieved via the rejection of scientific method and the acceptance of God: 'The implication for human life is hardly nihilistic: once we acknowledge and accept our finitude, we can concern ourselves with living *well*, and care first and most for the *well-being* of our souls, and not so much for their mere existence.' (2004 p.270)

In advocating theism as the only *true* path to meaning and fulfilment, Kass also attacks the technophile's attempts to fabricate meaning by creating the posthuman. Exposing the irony that it was the modernists who destroyed meaning in the first place: 'It is probably no accident that it is a generation whose intelligentsia proclaim the death of God and the meaninglessness of life that embarks on life's indefinite prolongation and that seeks to cure the emptiness of life by extending it forever.' (2004 p.271)

In a more caustic attack, McKibben utilises the nebulous rhetoric of modernists to pour scorn on their posthuman desires:

> 'The men who propose this leap into the unbounded future don't seem to know themselves quite why they want to jump. Because "it will allow us a deeper understanding of what truly we are", says Rodney Brooks. Because, says Gregory Stock, as our new biology allows us to "pierce the veneer of inside things, we [too] may reach the naked soul of man." Because, says J. Hughes, reengineered minds will "permit us to think more profound and intense thoughts." These sound like things that people say to each other in the parking lot at a Phish concert, before they drop acid.' (2004 p.231 – Brooks 2002 p.239, Stock 2002 p.198, Hughes 1996)

It is interesting to note that both theists and those who advocate the posthuman hold the belief that humanity needs salvation; salvation from the contingency and

meaninglessness of its existence. For the former, the solution to meaninglessness is one of paternalism: the creation of meaning via recourse to a fairytale, and its perpetuation through the *strict* adherence to scripture that is specifically designed to protect against enquiry into its spurious foundations. For the latter, the solution is one of temporal protection, deferring the revelation of meaninglessness until humans are capable of grasping its portent. In the meantime, humans should find meaning in the pseudo-modernistic belief of human amelioration, through devotion to science and technology, rather than knowledge and reason.

The irony here is that when Brooks, Stock and Hughes talk about: the 'deeper understanding of who we are', 'the naked soul of man', and 'more profound and intense thoughts', the higher understanding they appear to be referring to is that which undermines the whole posthuman *telos* – the ultimate triumph of scientific enquiry over meaning.

However when Mazlish speaks of an unhealthy attitude towards technoscience: a "frightened rejection", or a "blind belief", these standpoints are reflected not only in the conflicting positions of the Church of God and the religion of technology, but also in the public's response to the posthuman science fiction narrative. As McDougall argues:

'The United States, and the world, is caught in a *Flucht nach vorn*, a flight into the future. What do we fear most, that technocracy will be perfected, or that it won't be? Americans delight in such futuristic

epics as *Star Trek* and *Star Wars* precisely because the human qualities of a Captain Kirk or Han Solo are always victorious over the very technological mega-systems that make their adventures possible. We want to believe that we can subsume our individualism into the rationality of systems yet retain out humanity still.' (1997 p.449)

Indeed Bukatman argues: 'it is not technology per se that characterises the operations of science fiction, but the interface of technology with the human subject. The narration of new *technological modes of being in the world* represents a significant attempt to grapple with, and perhaps overcome, the fourth discontinuity that Mazlish described.' (1994 p.8)

This said if humans are to achieve the balanced relationship with technology Mazlish desires; this process has little to do with accepting that humans are machines. Indeed, it appears to have more to do with man transcending the need to worship at the altar of utopia, and the acceptance of life without the need for meaning. The irony with this conclusion is a project facilitating the transcendence of idolatry and the acceptance of meaninglessness has already been successfully completed, and is the ultimate legacy of scientific enquiry.

To this end, the rejection of metanarratives can be perceived is a social emancipator, freeing the human mind from the subjugation of ideology and religion. For Ancient Greek physician and anti-foundationalist Sextus Empiricus, the suspension of belief is one of the cornerstones of transcending judgment and

achieving "*ataraxia*": 'an untroubled and tranquil condition of the soul.' (*c*.200CE/1933 Bk.1 §10 p.18)

However while, for Sextus, the transcendence of dogmatism is the key to mature reasoning, Naess worries whether it is compatible with positive mental health: 'A practical problem very germane to the issue of scepticism arises here in confronting the Hellenic sceptic with modern teaching on positive mental health.' (1968 p.61)

Nevertheless, Naess appears *relatively* confident that anti-foundationalism is compatible with a positive mental outlook, although he appears to undermine this conclusion somewhat. Firstly, by using a modernistic concept of mental health: 'the criteria listed in… *Current Concepts of Positive Mental Health*' (1968 p.61), Naess incongruously offers-up the anti-foundationalist to the dogmatist for measurement. Secondly, by focusing on those who have successful achieved *ataraxia*, Naess appears to overlook the sceptics that are the most susceptible to mental health issues i.e., those who have failed to transcend meaninglessness.

Unfortunately here is where things become circular, for it will be argued that the First-World's degeneration into mindless consumerism and its ever increasing assortment of mental health issues is indicative of society's inability to transcend meaninglessness. Indeed many will advise that the only solution to this situation is to return to mythology. That is, even if anti-foundationalism is the means of

transcending *telos* dependency, human are, as a species, not mature enough to achieve this and thus must go back to believing in fiction:

> 'Because human consciousness is a recent development, we are still an adolescent species, particularly in terms of our need for immediate gratification, our need for authority in our lives and our susceptibility to turbulent emotions. While it is no disgrace to be adolescent, the longer we survive, the greater our chances of maturing into a lineage which understands itself and takes responsibility for its own future.' (Cocks 2004 p.1141)

Ironically having rejected both the theist and modernist *telos*, Cocks then concludes with the seemingly contradictory argument that if humans are to survive, into the "distant future", they will *need* an existential *telos*:

> 'History and the historical sciences offer Darwin's children a "creation myth", but where is the "destiny myth" in modern secular societies?... the art of managing our lineage's life cycle is to see it as an existential challenge fully comparable to the challenge of constructing a successful human life. That means envisaging and then attempting to live out a scenario script in which the actor playing the lineage, let us call her Posterity, moves through a program of big challenging projects towards fulfilment. Whether it is something called quality survival that becomes humanity's telos, its inspirational

imagine, is less important than that there be one.' (2004 pp.1144-1145)

Already Posthuman?

Film: *Videodrome* (1983)

Sleazy "Max Renn" is the president of a local cable television station: "Civic TV" that caters for a predominately male, late teens/early-twenties, after the pub demographic. Specialising in bawdy late night titillation, as their promo boasts: 'Civic TV, the one you take to bed with you.' [1:46] Renn's main tasks revolve around material acquisition and executive broadcast decision making, both made under the ethos of: 'What do you think? Can we get away with it? Do we want to get away with it?' [5:06]

Musing over the latest piece of soft-core pornography, Renn muses: 'It's soft. There's something too soft about it. I'm looking for something that will break through. Something tough.' [5.36] Fortuitously for Renn, "Harlan" a member of his technical staff - who

has been covertly tasked with intercepting "grotesque" satellite transmissions in the search for potential broadcast material - has happened upon "Videodrome" a violent, studio based torture programme, with seemingly no plot.

Later Renn appears as a chat show guest with radio personality "Nicki Brand" and media prophet "Professor Brian O'Blivion" (a character widely believed to be based on Marshall McLuhan) who only communicates through video recordings. During the show, the host asks Renn: 'your television station offers its viewers everything from soft-core pornography to hard-core violence. Why?' [09:38] This question then provokes the desired short debate on the effects mass media has on society.

Whilst Harlan is locating the Videodrome signal to Pittsburgh, Renn is entertaining Brand. Back at Renn's flat, Brand, looking for pornography, finds a copy of Videodrome. Renn warns her of its content but she finds it stimulating, and having admitting to enjoying a little low level masochism in the past, Brand propositions Renn to some.

Later Brand declares that she is going on assignment to Pittsburgh, in an attempt to audition for Videodrome. Renn urges Brand not to go because it is too dangerous, but soon finds himself repudiating similar warnings about Videodrome, that: 'What you see on that show, it's for real. It's not acting, it's snuff TV.' [25:15] Arguing that there seems little point in making a real torture programme when it is easier and safer to fake it, Renn is informed that Videodrome is different 'Because it has something that you don't have Max. It has a philosophy and that is what makes it dangerous.' [25:38]

Given O'Blivion's name as associated with Videodrome, Renn meets O'Blivion's daughter "Bianca" at her father's "Cathode Ray Mission". Here, the homeless are given access to televisions as a form of treatment; Bianca argues that they suffer from 'a disease forced on them by a lack of access to the cathode-ray tube.... Watching TV will help patch them back into the world's mixing board.' [30:00]

Having failed to meet with O'Blivion, Renn goes home where he suffers a momentary violent hallucination when his secretary arrives to drop off a package from the Professor. The package contains a video that Renn watches whilst hallucinating further, in it O'Blivion seems to warn Renn of the carcinogenic and hallucinogenic dangers of watching Videodrome.

Resuming his search for O'Blivion, Renn revisits Bianca only to be informed that O'Blivion died eleven months previously from a Videodrome associated brain tumour. It transpires that Bianca has been "keeping him alive" in the eyes of the media by splicing together old video material from O'Blivion's personal collection. Bianca also admits that her father 'helped to create Videodrome. He saw it as the next phase of the evolution of man as a technological animal. When he realised what his partners were going to use it for, he tried to take it away from them and they killed him, quietly.' [41:42]

Hallucinating again, Renn visualises a video-sized opening appearing in his belly, which he then explores with the item at hand, a Walther PPK; but unfortunately

in the process he loses the handgun in the cavity. Renn then receives a telephone call informing him that "Barry Convex" wants to meet him to discuss Videodrome.

Convex, describing himself as "Chief of Special Programmes", explains that he works for NATO and makes Videodrome, which he admits 'can be a giant hallucination machine and much, much more.' [47:12] He then places a contraption on Renn's head that he states will record Renn's hallucinations, something Convex wishes to have analysed. However the machine results in Renn hallucinating further, this time that he and Brand are participating in Videodrome.

Back in the engineering laboratory, Renn asks Harlan whether he is also suffering from hallucinations. Harlan says he is not, but then admits that 'I was playing you tapes, Max, pre-recorded cassettes. Videodrome has never been transmitted on an open broadcast circuit. Not yet.' [59:50] The sudden appearance of Convex confirms that Harlan is also a NATO agent and that the pair are working on research and development, their plan to use Civic TV for their first transmission of Videodrome. At this point Convex

produces a video, which, Renn hallucinates, is inserted into the hole that has re-materialised in his belly. The video appears to programme Renn, via schizophrenic voices, to kill his work partners, and thus enable Convex to take control of station.

Back at Civic TV, Renn retrieves the Walther from his belly cavity and shoots the other members of station's executive. He then sets off to kill Bianca, his secondary objective. However, Bianca's knowledge of her father's work allows her to deprogramme and then, reprogramme Renn to destroy Videodrome.

Seeking Convex, Renn runs into Harlan who asks him whether Bianca had caused him any trouble. Renn's response implies that he has killed her, as which point Harlan attempts to give Renn a new task via the insertion of a new cassette. However whilst inserting the video, Renn transforms it into a stick grenade fused to Harlan's hand, which detonates moments later killing Harlan.

Having tracked Convex to a trade show, Renn's hand and pistol fuse together and he shoots Convex, his body

radically transforming as he dies. Renn then retreats to the harbour and takes refuge on a derelict ship. Renn hallucinates that there is a television onboard, on which Brand materialises and tells him that: 'Videodrome still exists. It's very big, very complex. You've hurt them but you haven't destroyed them. To do that you have to go on to the next phase.... To become the new flesh you first have to kill the old flesh.' [84:03] Renn then watches an image of himself on television, in which he places the fused pistol to his head and shoots himself having recited the phrase: 'Long live the new flesh.' [85:32] Renn then re-enacts this process for "real".

Videodrome centres on 'the pervasiveness of the media-dominated spectacle in a postmodern world' (Bukatman 1994 p.85) and appears to vilify mass media, predominately in the form video and satellite television, accusing it of being a corruptive and brutalising influence of Western society. However, while sociological debate concerning whether *passive* (television, cinema, etc.) or *participant* (computer games etc.) representations of violence serve to brutalise society is incomplete; the film's narrative implies it is a *fait accompli*. Indeed, the film makes an overt statement suggesting that this is already happening and possibly irrevocably so i.e., Brand's chat show declaration on the effects of

television: 'we live in over stimulated times. We crave stimulation for its own sake. We gorge ourselves on it. We always want more, whether it's tactile, emotional or sexual.' [10:20] This idea is then built upon with Renn's rejoinder regarding Brand's "stimulating" red dress, for it allows Brand to acknowledge that she wore it because: 'I live in a highly excited state of over stimulation' [10:52], *QED*. The inference is that Brand's actions are already a product of such stimulation.

The idea of media brutalisation is of course nothing new, Plato clearly worries about the ethical and social effects of art, specifically poetry:

> 'Like one who gives a city over into the hands of villains, and destroys the better citizens, so we shall say that the imitative poet likewise implants an evil constitution in the soul of each individual... poetry is not to be taken seriously, as though it were a solemn performance which had to do with truth, but that he who hears it is to keep watch on it, fearful for the city in his soul'. (*c*.360BCE/1866 Bk.X 605 pp.308-309, 608 p.312)

Indeed, *Videodrome* appears to be making a contemporary version of Plato's argument, only this time regarding the effects of *mass* media representation on its audience i.e., that the portrayal of violence brutalises the viewer and helps to 'contribute to a social climate of violence and sexual malaise'. [9:59]

However, having made the case against television and then accepted it as a given, O'Blivion, following a McLuhanesque rationale, argues: 'The television screen is the retina of the mind's eye. Therefore the television screen is part of the physical structure of the brain. Therefore, whatever appears on the television screen emerges as raw experience for those who watch it.' [35:21] *Videodrome* then transcends the contemporary question of receptivity and moves onto the issues of affectability, O'Blivion later declaring that:

> 'I believe that the growth in my head... is not really a tumour, not an uncontrolled, undirected little bubbling part of flesh, but that it is, in fact, a new organ, a new part of the brain. I think that massive doses of Videodrome signal will ultimately create a new outgrowth of the human brain, which will produce and control hallucination to the point that it will change human reality. After all, there is nothing real outside our perception of reality, is there? ' [42:53]

While O'Blivion sees the body's physiological adaptations to Videodrome as benign and 'the next phase in the evolution of man as a technological animal' [41:45], it is portrayed as a dangerous enabler for direct control over the viewer. As Bukatman notes:

> 'In *Videodrome* the body literally opens up – the stomach develops a massive, vaginal slit – to accommodate the new videocassette "program". Image addiction reduces the subject to the status of a

> videotape player/recorder; the human body becomes a part of the massive system of reproductive technology'. (1994 p.89)

Having undergone this process, Renn is informed by Bianca that: 'You're an assassin now, for Videodrome. They can programme you; can play you like a videotape recorder. They can make you do what they want.' [70:28]

Although seemingly disparate, these events come together to form a cogent allegory regarding man's evolutional future. Firstly, there is the proposition that, if humans can be affected by *representations* of reality in an analogous fashion to how "reality" affects them, then it follows that prolonged interaction with media technology will influence behaviour, both from the perspective of desensitisation towards violence, and suggestibility to act-out violence. While this may initially be seen as a mere by-product of media technology; the very act of revealing such effects exposes them to power issues and the intentional manipulation of the individual, and beyond this societies as a whole, by controlling media output. As Dinello argues:

> 'Cronenberg reveals Videodrome as the tool of a military-funded corporation. He calls attention both to the madness of utopian Technologism and to the ways in which such blind fanaticism can be appropriated by the technocratic order of the state. *Videodrome*... indicts corporate and military support for technological autonomy while showing how utopian/religious propaganda is used to

> manipulate society's acquiescence and addition to the forces of technological expansion.' (2005 p.153)

Secondly, if media representations affect the human as if they were real events, and humans adapt to environmental influences, then it follows that prolonged interaction with media devices and media representations could influence evolutionary mechanisms and produce structural, behavioural and physiological adaptations, both within individual lifetimes and over geological time. Thirdly, if humans adapt to media devices and their representations, this will not only create increased compatibility between the two, it will also result in the gradual blurring and eventual 'dissolution of all boundaries which might serve to separate and guarantee definitions of "spectacle", "subject" and "reality" itself.' (Bukatman 1994 p.85)

As already stated, Bostrom characterises the posthuman as: 'possible future beings whose basic capacities so radically exceed those of present humans as to be no longer unambiguously human by our current standards.' (2003b p.5) He has since amended this definition, in response to Hayles (1999), to state: 'I define a posthuman being as one who has at least one of these capacities [healthspan, cognition, and emotion] in a degree unattainable by any current human being *unaided* [my emphasis] by new technology.' (2007 p.12) Unfortunately Bostrom's alteration appears to confuse rather than clarify his position, as he clearly does *not* mean to imply the posthuman will be achieved without the aid of new technology, in fact he means the very reverse. His use of "unaided" is an attempt to demarcate

entity boundaries. For Bostrom, humans that utilise technology that is outside the bodily membrane, for example using a computer via a keyboard, should *not* be considered posthuman. This is even if said computer has cognition that "radically exceed those of present humans". This is because, for Bostrom, the human cannot become posthuman vicariously i.e., by being only associated with such technology. However a human capable of two-way communication with the same computer, via a neurological interface, would be considered posthuman, for this linkage is tantamount to man and machine becoming a new single entity. Stock attempts a similar piece of taxonomy when he tries to differentiate between cyborgs and *fyborgs* – "functional cyborgs" (Chislenko 1995):

> 'Cyborgisation incorporates machine components into our bodies. Fyborgisation fuses us functionally, rather than physically, with machines. Some cyborgisation already exists, of course, since we do incorporate devices *inside the envelope of our skin.* [my emphasis] But the physical boundary between our internal and external worlds has changed little except for dental fillings and the occasional prosthetic limb, heart valve, or artificial hip.' (Stock 2002 p.25)

The pedant will note that Stock seems to undermine his internal/external boundaries when he appears to list prosthetic limbs as "inside the envelope of our skin". Nevertheless, if technology, without a neurological interface, can affect the human both psychologically and physiologically, within a lifetime and over geologic time; and humans can gain access to, and utilise, the same technological

information, via vision and audio etc., that they could via a neurological interface, then humans appear already to be posthuman. Indeed the human senses already appear to be neurological interfaces between technological information and human brain information.

The irony here appears to be the desire, for those advocating the posthuman, to illustrate the compatibility between man and machine, and then, to rush to re-separate the two the moment the dissolution of boundaries becomes too persuasive. However, this behaviour may be indicative of the incompatibility between the belief that human salvation will come in the form of the posthuman, and its apparent denouncement, the claim that humans are already posthuman. That is, to proclaim one is already posthuman, and thus self-evidently not saved by technology, is tantamount to heresy against the posthuman faith. As Jonathan Meades says of the ideal socialist state, although equally applicable to all utopian visions: 'Because the dream is so much more potent than the actuality, the actuality must be postponed. Indefinitely.' [10:37]

It is interesting to note that Bostrom uses the term "any current human" when referring to the yardstick a would-be posthuman is to be offered up to. This may be a tacit acceptance that the "human" is a dynamic concept and without such a stipulation his taxonomy threatens to become meaningless. An example of this is when he declares: 'Since at least some human beings already manage to remain quite healthy, active, and productive until the age of 70, one would need to desire that one's healthspan were extended greatly beyond this age in order that it would

count as having a desire to become posthuman.' (Bostrom 2007 p.7) From this statement it would not appear overtly assumptive to suggest a doubling of human healthspan to 140 – healthspan being different from life expectancy due to its proviso of remaining "healthy" throughout life – would constitute, for Bostrom, having become posthuman, that is having a healthspan which "radically exceed those of present humans". However from a diachronic perspective, *some* First World humans probably already enjoy a doubled healthspan. Vaupel and Kistowski state: 'Over most of the course of human existence life expectancy hovered between 20 and 30 years.... Even in Western Europe, life expectancy did not reach age 40 until after 1800 and age 50 until after 1900.' (2005 p.8) This suggests the healthspan of those in antiquity was substantially shorter, even in extreme cases, than it is today. If so, and an analogous classification of the posthuman had been used at the time, then it would appear, contrary to Bostrom's position, that some twenty-first century humans are already posthuman.

Videodrome uses violence and television to convey its narrative, but it is evident that the specifics of both message and media device are unimportant to the film's posthuman hypothesis: that it is *unnecessary* to develop sophisticated connective technology for there to be a marriage of man and machine. Aping Plato, Baudrillard argues:

'But one must watch out for the negative turn that discourse imposes: it is a question neither of disease nor of a viral infection. One must think instead of the media as if they were, in outer orbit, a kind of

genetic code that directs the mutation of the real into the hyperreal, just as the other micromolecular code controls the passage from a representative sphere of meaning to the genetic one of the programmed signal.' (2004 p.30)

While Baudrillard's attention, like that of *Videodrome*, is directed primarily at the television, his hyperrealist sentiments can be attributed to all manifestations of communication, including the non-electronic, such as: art, literature, architecture etc.. This said mass media, such as radio, television and now the internet etc., has made the dissemination of information more accessible and pervasive than ever. The contemporary exemplar of this was Hitlerian demagoguery, which instilled, in elements of the German populous, a unifying hyperreal emotional intoxication. Indeed, with a different notion of subject boundaries, Bostrom might have to conceding this unified hyper-emotion, was a posthuman capacity, for it was clearly: 'more excellent than that which any… human could achieve.' (2007 p.11) However, as Readings caustically remarks of *the idea of excellence*: 'the general application of the notion is in direct relation to its emptiness.' (1999 p.23)

The ability of current media information to programme and reprogramme the human clearly undermines the necessity of a direct link between human and machine to result in the posthuman. Surely a human is both analogously cognitively enhanced, and equally *aided* by new technology, with a pocket calculator, as with an implanted microchip. The only tangible difference between

the two, beyond the laboriousness of the process, is the illusion that the former constitutes two entities, whilst the latter constitutes only one.

Videodrome functions as a reminder that the human is an evolutionary being that adapts to its environment, and proposes that humans could evolve and eventually merge with seemingly heterogeneous technoscience simply through prolonged interaction. Indeed our dependence on technology and addiction to media devices has probably resulted in the commencement of this process.

CHAPTER VI

(RE)APPRAISING HUMANISM

In an attempt to understand and expose the nature and consequences of the posthuman, the last three chapters have thrown into question the value and legitimacy of humanism as the dominant metanarrative. Indeed it may appear that contemporary humanism's inability to answer coherently the question of the posthuman is symptomatic of, not only the erroneousness of its conception and adherence, but also – in the apparent absence of a more successful account – the need to reject *all* metanarratives.

To this end there has been the suggestion that local and contingent "a-humanist" methodologies and the rejection of metanarratives may offer a fuller description of man's relationship with modern technology, and thus, *ipso facto*, with the posthuman. However, whilst these positions may be successful in producing a less biased account of man's relationship with technology, the value of such descriptions in advancing the posthuman debate appears somewhat limited.

Actor-Network Theory

Actor-Network Theory (ANT), sometimes known as the "sociology of translation", is an a-humanist analytic framework designed to facilitate the study

of technological innovation, knowledge-creation and 'the role played by science and technology in structuring power relationships.' (Callon 1986 p.196) The strategy of ANT is to adopt a standpoint that enables the creation of a "more" neutral description of actor-networks i.e., how they are formed, interact, are subverted, and can collapse; and thus to reveal the power issues that tend to remain hidden when such networks are described from the perspective of humanism.

To achieve this goal, Actor-Network Theory incorporates the principle of generalised symmetry i.e., the assumption that the actors, or rather "actants", of a network enter it with an equal ability to influence. The basis for this is the assumption that nothing exists prior to, or outside of, the network association.

Actants, within Actor-Network Theory, are not limited to man, or even animals, but also include inanimate objects. However, in doing this ANT appears to be assimilating non-humans into man, rather than man into non-humans, for it insists that non-humans having agency. Admittedly this agency is *not* meant to presuppose intentionality, but even in this form it is a concept usually reserved exclusively for man.

Nevertheless, Latour believes: 'Critical sociologists have underestimated the difficulty of doing politics by insisting that the social consists of just a few types of participants' (2007 p.250); and he argues that by dissolving the assumed boundaries between who/what is, and who/what is not, deemed an actor within a

network, Actor-Network Theory can make critical sociology 'sensitive again to the sheer difficulty of assembling collectives made of so many new members once nature and society have been simultaneously put aside.' (2007 p.259)

Latour emphasises his point by arguing that: 'For instance, fishermen, oceanographers, satellites, and scallops might have some *relations* with one another, relations of such a sort that they *make* others do unexpected things'. (2007 p.106) In doing so he makes a passing reference to Callon's seminal article on the scallops and fishermen of St. Brieuc Bay. Here Callon utilises 'a new approach to the study of power' (1986 p.196), which he refers to as the sociology of translation, to describe the scientific and economic interrelationship of fishermen, scallops, and conservational biologists, surrounding the decline of the scallop populations in coastal Brittany.

Employing three main principles: 'those of agnosticism (impartiality between actors engaged in controversy), generalised symmetry (the commitment to explain conflicting viewpoints in the same terms) and free association (the abandonment of all *a priori* distinctions between the natural and the social)' (Callon 1986 p.196), Callon describes the scallop's interaction within the network in anthropomorphic terms:

'In principle the larvae anchor, in practice they refuse to enter the collectors. The difficult negotiations which were successful the first time fail in the following years. Perhaps the anchorages were

accidental! The multiplicity of hostile interventions (this at least is the interpretation of the researchers in their role of spokesman for the scallops), the temperature of the water layers, unexpected currents, all sorts of predators, epizooty, are used to explain why the interessement is being inefficient. The larvae detach themselves from the researchers' project and a crowd of other actors carry them away. The scallops become dissidents. The larvae which complied are betrayed by those they were thought to represent. The situation is identical to that of the rank and file which greets the results of Union negotiations with silent indignation: representivity is brought into question.' (1986 pp.219-220)

Callon believes that ANT enables a fuller description of the power relationships within this network because it highlights that if the network controversies are to be resolved, 'the complicity of the scallops is needed as much as that of the fishermen.' (1986 p.222)

In an analogous move Parker uses Actor-Network Theory to 'make connections between a post-foundational epistemology, science fiction films and "critical management"... [in] an attempt to examine how modes of organising might be judged' (1998 p.503) from the apparent paralysis of an anti-foundational position. A crucial of his work is the notion of "cyborganisation", the merging of man and machine, although this concept is in stark contrast to that of the "posthuman". Here cyborganisation is more flexible and highlights humanism's dependency on

boundaries. Indeed, having dissolved the taxonomy surrounding man, nature and machine, what constitutes the "cyborg" is simply a matter of how the term is conceived. Parker's use of cyborganisation appears to have more to do with an intimate connection between man and technology, in the sense that a man using a computer, or driving a car, is a "cyborg", rather than the idea of man and machine joining to become the posthuman.

However, while combining Actor-Network Theory with cyborganisation facilitates a fuller description of the power issues surrounding the changing relationship between man and machine, it unfortunately binds this description to post-foundationalism's inability to judge. For if, as Protagoras argues, man is the 'measure of all things, of those that are that they are, and of those that are not that they are not' (*c*.200CE/2000 Sextus Bk.1 §216 p.56), but ANT's a-humanism denies man's legitimacy to measure, then – in the absence of any alternative arbiter of measurement – there can be no judgment. Indeed, without judgment *all* output utilising ANT is necessarily rendered hermeneutic.

Parker acknowledges this limitation, but counters by arguing that Actor-Network Theory can still be used as an impediment against man's hubris and his tendency to rush to judgment:

'Indeed, it is an obvious point for those who will bemoan what they see as the fatal limitations of this kind of writing in critical organisation theory – that is to say that I am now incapable of

mounting a sustained attack on capitalist multinational practices, gender discrimination, the managerialisation of the lifeword or whatever. But then that is exactly the point. The a-humanism suggested by actor-network theory and the metaphor of the cyborg could be used as an effective resource to make that rush to judgment into a stumble'. (1998 pp.515-516)

Unfortunately inhibiting man's rush to judgment in this manner is not, in itself, a sustainable position; for as post-foundational in nature, its legitimacy is predicated on a standpoint that is corrosive to *all* positions, even to its own. Consistently applied it will not only undermine man's rush to judgment, it will also undermine the legitimacy of undermining man's rush to judgment. Indeed having undercut the foundational, the post-foundational will then undercut the local and contingent. When Haraway combines, in her critical feminist utilisation of the cyborg metaphor, the post-foundational argument that: 'the production of universal, totalising theory is a major mistake that misses most of reality, probably always, but certainly now' (1991 p.181), with her belief that: 'Cyborg imagery can suggest a way out of the maze of dualisms in which we have explained our bodies and our tools to ourselves.... It means both building and destroying machines, identities, categories, relationships, space stories' (1991 p.181), she is clearly alluding to the destruction and re-drawing of boundaries and identities that, from her position, cannot have a legitimate basis. The reason why Haraway's position is not self-undermining is because it is intended to function (akin to ANT) as purely methodological. It is a call to arms, an attempt to provoke critical

feminists to think and engage beyond the assumed norms. It is not, however, an attempt to generate or legitimise the destruction or creation of new metanarrative boundaries.

While a-humanist network descriptions can illuminate hidden power issues and thus are useful in social policy making, these descriptions function as a commentary on humanism rather than an alternative to humanism. That is, ANT's methodological nature ultimately limits its sphere of influence to descriptions that either facilitate humanist policy, or inhibit it in a parochial and short-term sense.

This said applying Actor-Network Theory, or a similar a-humanist methodology, to the posthuman debate has sociological value beyond its ability to *dictate* policy making. The US posthuman debate has highlighted that entrenched positions, vested interests and hidden agendas, have resulted in a dialogue awash with misinformation and hyperbole. In addition, an analysis of the posthuman utilising the science fiction narrative has illustrated that while certain narratives appear inherently positive/negative/or neutral, these are illusory, a simple function of assumed, usually indoctrinated, standpoints. As a result, any device that draws attention to, and allows the public and policy makers to see beyond, the power issues surrounding the posthuman, is surely laudable.

To this end, the science fiction narrative has a role to play in influencing public opinion, and possibly public policy, with regard to the posthuman. For it has a unique ability to convey, in an exoteric fashion and to a wide audience, the power

issues and unforeseen consequences of such policy decisions. However, science fiction is also subject to analogous power issues and can function as little more than propaganda. Clearly science fiction has paymasters and, in a bid to stay financially viable, tends to depict self-selected scenarios that pander to the tastes of its target demographic. Whilst these issues and others, such as overt product placement etc., appear reasonably benign to a sophisticated audience, there are more covert power issues, for example, that 'science consultants use fictional films as promotional devices for their research.' (Kirby 2003 p.231) Indeed, the next step may be for lobbyists, multinational corporations and possibly even governments to commission science fiction narratives that reflect their vested interests, and then use these systematically to promote future visions that benefit themselves. Unfortunately it would be a little naïve not to assume this process has already commenced.

The Question Concerning Technology

In stark contrast to ANT's methodological descriptions, Heidegger attempts to challenge humanistic modernity at a more fundamental level. Rather than wishing to contrast humanist and a-humanist descriptions of technology, Heidegger attempts to replace modernity with, what many would hesitate to call, a different metanarrative, specifically, one grounded in man's authentic interaction with Being.

Heidegger believes that the problem with modernity is that it is both enabling and, by its very nature, facilitating, the instrumentalisation of man. Writing in the aftermath of the Second World War, Heidegger could not deny the technological progress that had enabled the eugenic and selective breeding programmes of Nazi Germany; although as a card carrying member of the National Socialist German Workers' Party he may have liked to. This said, in his essay entitled *The Question Concerning Technology*, Heidegger gives an overtly general attack on modern technology, one that is conspicuously absent of the paradigmatic examples of the technological instrumentalisation of man.

Heidegger opens his essay by clarifying his intentions:

> 'We shall be questioning concerning technology, and in so doing we should like to prepare a free relationship to it. The relationship will be free if it opens our human existence to the essence of technology. When we can respond to this essence, we shall be able to experience the technological within its own bounds.' (1977 pp.3-4)

Indeed, having stated man does not at present have a "free" relationship with the essence technology, Heidegger clarifies that 'we are delivered over to it [technology] in the worst possible way when we regard it as something neutral; for this conception of it, to which today we particularly like to do homage, makes us utterly blind to the essence of technology.' (1977 p.4)

Heidegger argues that the essence of technology has two common descriptions: 'One says: Technology is a means to an end. The other says: Technology is a human activity.' (1977 p.4) Having done so he concludes that 'the current conception of technology, according to which it is a means and a human activity, can therefore be called the instrumental and anthropological definition of technology.' (1977 p.5) It is at this point that Heidegger reveals what appears to be the very crux of what he believes to be the task at hand:

> 'Everything depends on our manipulating technology in the proper manner as a means. We will, as we say, "get" technology "spiritually in hand". We will master it. The will to mastery becomes all the more urgent the more technology threatens to slip from human control.' (1977 p.5)

In context, Heidegger appears to be stating that if man wishes to have a free relationship with technology – a relationship that he believes at present is commonly and erroneously perceived as neutral – man needs to reveal the essence of technology, and then put it back in its place as simply a means. For Heidegger, putting technology back in its place is a matter of manipulation; man must manipulate technology so that he can master it. Indeed mastering technology is of prime importance to the spirituality of man, for if man does not return to being the master of technology, technology will soon become the master of man.

Heidegger attempts to reveal both the essence of technology and man's true relationship with it via an etymological argument founded on ancient Greek. Of course this argument should not simply be dismissed – for it is Heidegger's method of explaining both why man has developed an unhealthy relationship with technology and how he may be able to break from it – but nevertheless three details must be noted. Firstly, as ostensibly unfalsifiable, etymological arguments from antiquity can suffer from, what might be politely called, "artistic licence". This said, O'Brien argues 'from the consultations which I have had with Greek scholars concerning this particular essay, the etymologies here do not trespass as unashamedly beyond the boundaries of acceptability as some of his more radical interpretations.' (2004 p.8) Secondly, Heidegger's position in highly unlikely to be contingent on his etymological argument, that is if his interpretations were falsifiable, and then deemed false, it is nigh inconceivable that Heidegger's response would be to unilaterally concede the spirit of his argument is unsound. Thirdly, Heidegger's style of writing is notoriously obscure and difficult to grasp, especially for the non-German speaker; indeed it appears all too easy to get lost, in the exercise of understanding Heidegger's rhetoric, sufficiently to overlook the simplicity of what he is attempting to achieve.

Clarifying what he believes to be the effect of modern technology, Heidegger states:

> 'Everywhere everything is ordered to stand by, to be immediately at hand, indeed to stand there just so that it may be on call for a further

ordering. Whatever is ordered about in this way has its own standing. We call it the standing-reserve [*Bestand*]. The word expresses here something more, and something more essential, than mere "stock". The name "standingreserve" assumes the rank of an inclusive rubric. It designates nothing less than the way in which everything presences that is wrought upon by the challenging revealing. Whatever stands by in the sense of standing-reserve no longer stands over against us as object... The fact that now, wherever we try to point to modern technology as the challenging revealing, the words "setting-upon", "ordering", "standing-reserve", obtrude and accumulate in a dry, monotonous, and therefore oppressive way, has its basis in what is now coming to utterance. (1977 p.17)

Although not mentioned by name in Heidegger's essay, his etymological argument appears to build on his "*dasein*" – the concept he uses in an attempt to uncover the primal nature of man's "Being". For Heidegger, Western philosophy has, since Plato, assumed the nature of Being to the extent that it has been deemed undeserving of a fuller examination. As a result, Western philosophy has erroneously preoccupied itself with investigating what it is to be man, his essence, from which his purpose is then to be extrapolated, rather than his Being. In doing so Western philosophy has failed to acknowledge that existence precedes essence, and thus an investigation into existence can be argued to have primacy over that of essence.

Heidegger believes that the erroneous focusing on essence rather than existence has resulted in man developing an unhealthy relationship with technology, specifically in its modern guise. Unlike earlier interactions, man's relationship with modern technology is one that is predisposed to systematise nature into the instrumental, the result of which is nature then being revealed back to man as mere utility. Nature, viewed through the lens of modern technology, has or lacks value dependent on its usefulness and thus man has become embroiled in a relationship with nature that is far from neutral. Yet this ordering, Heidegger believes, is increasingly being reflected back on man, as he, through scientific endeavour, re-assimilates himself back into nature. The worry here is that if this process is left unchecked, it will eventually result in the total systematisation of man's life.

As already stated, one outcome of modernistic technoscience has been the whittling away of man's self-confidence, specifically the belief that he is superior to nature. Where once man assumed, either scripturally or self-evidently, that he was ontologically more important than nature, scientific endeavour has undermined this belief and reordered him as, at best, only relatively different from nature. However, if nature is ordered by modern technology as nothing but utility and man has now been downgraded, via scientific investigation, to nature; then consistency dictates that man should also be ordered by modern technology to be nothing but utility.

Writing in the mid-twentieth century, Heidegger is primarily concerned with the social ordering effects of modern technology – that is, the revealing that man lacks meaningful agency (something that Heidegger believes is self-fulfilling, if man is treated and lives life as if he has no meaningful agency, he therefore ceases to have meaningful agency) and the resultant structuring of his life as mere utility – rather than any future development of the posthuman. Nevertheless, while those who zealously advocate the posthuman appear to have highfalutin delusion – that as man reorders himself as commensurate, rather than superior to nature, he can reassert his superiority by breaking from the mortal flesh, via association with electronic technology – Heidegger reminds man that the most likely motivating force behind the move towards the posthuman is instrumentalisation. The pseudo-perfecting or tidying of man, in the same fashion as nature, in order to create individuals fit for purpose, to serve society as merely employment resources. The eradication of disease, aging, disability, genetic inferiority, difference etc., not because of the social delusion that it serves the individual, but because it serves society. Modern technology has revealed such traits as of little instrumental value, they are a burden to society, and their elimination will increase efficiency.

Heidegger's response to the revealing of man as utility by modern technology is to propose, if not a solution, an obscure, convoluted and seemingly implausible mitigation:

> 'For the saving power lets man see and enter into the highest dignity of his essence. This dignity lies in keeping watch over the

unconcealment – and with it, from the first, the concealment – of all essential unfolding on this earth. It is precisely in enframing, which threatens to sweep man away into ordering as the ostensibly sole way of revealing, and so thrusts man into the danger of the surrender of his free essence – it is precisely in this extreme danger that the innermost indestructible belongingness of man within granting may come to light, provided that we, for our part, begin to pay heed to the essence of technology.' (1977 p.32)

This said, how can man watch over what is unconcealed? To this end Heidegger suggests, although rather equivocally, that "art" may be the method by which man can reveal the truth to himself:

'Could it be that the fine arts are called to poetic revealing? Could it be that revealing lays claim to the arts most primally, so that they for their part may expressly foster the growth of the saving power, may awaken and found anew our look into that which grants and our trust in it?' (1977 p.35)

As stated, man measures nature as valuable contingent on its utility to man, as a result nature appears improvable via the increasing of its utility to man. However, in the absence of God, man also becomes the measure of his own value, resulting in the conundrum of how man should value himself. The assumed answer appears to be that, as with nature, man's value is to be measured by his utility to man,

which in turn results in man also appearing improvable via increasing his utility to man. Yet if this is the case, then undermining modern technology's ability to order man into standing-reserve appears to be a matter of altering man's current valuing process.

The simple solution to this appears to be the reinstatement of God and his decree that man is scared and not improvable; but Heidegger is sceptical whether man can reinvent and sustain God. Instead he proposes to abandon humanism via altering man's perception of nature; for if man's instrumentalisation of nature is the archetype for his instrumentalisation of himself, then altering the archetype should, in turn, alter its derivative, and thus castrate modern technology's power to order man.

The art that Heidegger believes can foster these altered perceptions, reveal nature as something other than simple utility, is that of romanticisation, the representation of nature as having intrinsic value, in and of itself. For example, portraying nature as having teleology i.e., that a healthy acorn planted and nurtured under optimal conditions will yield an exemplary oak tree, irrespective of man's interaction or measure. Interestingly, for Heidegger, both the problem of modern technology and its solution involves the assimilation of man and nature. However, while the "devaluing" of man as mere utility is the re-assimilation of man back into the archetype of nature, the inflation of nature as ornamentation is the assimilation of nature into the archetype of man as God's creation.

The reason why Heidegger proposes to assimilate nature into man is because he is, if not a humanist, an anthropocentric; his priority is the protection of a meaningful sense of man's agency, rather than any highfalutin ideas regarding the "true" nature of Being. So rather than adopting the a-humanism of radical environmentalism that allows the meaninglessness of nature to reflect on man, thus undermining the pedestal he has placed himself on, Heidegger proposes to inflate nature, place it on the pedestal next to man and thereby neutralise its devaluing effect. The role of the artist is, for Heidegger, the veneration of nature via anthropomorphisation, to adorn it with the value and sanctity that has been, in the past, erroneously applied to man.

Theoretically speaking, the adoption of Heidegger's strategy may well secure both a meaningful sense of man's agency and protect man against being ordered as standing-reserve. Indeed it would also appear to resolve the issue of the posthuman, for, as with the reinstatement of God, if man is no longer to be measured as utility, but rather decreed with inherent value that cannot be increased, the very notion of increasing man's utility becomes incoherent. However, although Heidegger's argument is not a direct attack on modern technology, it is tangentially, and its success appears to undermine technoscience as an existential project. The belief that man's disposition, and nature *per se*, can be improved is the driving force behind the science of Christianity; a situation mirrored in secular modernity with the addition that man *per se* is also perceived as improvable. However if nature, man, and man's disposition are *not* deemed

improvable, then what is the motivating force behind the future investigation and development of technoscience?

The lifestyle consequences of undercutting scientific endeavour in this fashion are clearly incompatible with the dominant belief systems held by current First World societies, sufficiently that only a massive collective epiphany could make it palatable, something Heidegger appears to acknowledge:

> 'Philosophy will not be able to bring about a direct change of the present state of the world. This is true not only of philosophy but of all merely human meditations and endeavours. Only a god can still save us. I think the only possibility of salvation left to us is to prepare readiness, through thinking and poetry, for the appearance of the god or for the absence of the god during the decline; so that we do not, simply put, die meaningless deaths, but that when we decline, we decline in the face of the absent god.' (Heidegger 1966/1990 pp.56-57)

A-humanism as Third Wave Modernity

Heidegger's essay builds on his understanding of man's unique interaction with Being, as O'Brien states:

'Yet we are, in that same instance, offered the possibility of tapping the *redemptive* quality of that which threatens us in the form of the saving power which sustains itself therein since the degeneration or regeneration must in the end take effect *through* human Dasein.' (2004 p.38)

An interesting point here is to question whether Heidegger's *dasein* is contingent on his belief that modernity is failing, that is whether Heidegger would have still advanced, or even developed, it had he believed modernity served man's best interests. Clearly from a historical context, Heidegger's *dasein* is far more likely to have originated as a response to the German population's need for meaning in the aftermath of the First World War, than any non-reflexive epiphany of etymology. Nevertheless, this does not rule out Heidegger as a naïve emancipator, someone who serves, if not the "truth", what he believes most appropriate, regardless of its consequences. Would Heidegger, believing, as he states, that *dasein* is a "more" appropriate interpretation of Being than that currently assumed, have championed it with equal gusto, if he believed it did *not* serve man's best interests?

Of course having rejected foundationalism, Heidegger is not claiming *dasein* is truth, the way it is; *dasein* is a mechanism, an illusory perspective, used to create/protect a meaningful sense of agency. It is a replacement for, and if believed dogmatically, functions analogously as, the false consciousness of religious belief in meaning. Nietzsche writes:

> 'God is dead! God remains dead! And we have killed him! How can we console ourselves, the murderers of all murderers! The holiest and the mightiest thing the world has ever possessed has bled to death under our knives: who will wipe this blood from us, what water could we clean ourselves? What festivals of atonement, what holy games will we have to invent for ourselves? Is the magnitude of this deed not too great for us? Do we not ourselves have to become gods merely to appear worthy of it?' (1882/2001 Bk.III §125 p.120)

Heavily influenced by Nietzsche, Heidegger's *dasein* places man as God of his own existence, and potentially the self-deluder that this is the way it "really" is. Indeed, Heidegger believes that an authentic interaction with Being will free man from ordering; but surely man, the animal, is an inherently regimented being. Until very recently in his historical lineage, man was heavily ordered by the ecological niche he inhabited. His need for food, shelter, warmth, protection etc., coalesced with seasonal variability to create nomadic groups of gather-hunters ("hunter-gathers" being a self-aggrandising misnomer that erroneously placed the role of hunting above that of gathering) with social hierarchies derived from survival dynamics. A pertinent question here appears to be, if man's technological ingenuity has freed him from one form of ordering by leading him directly into another, is this problematic for man? Paradoxically, if man were to crave anything from existence, it appears more plausible for him to crave *external* ordering (nature, God, modern technology etc.) rather than freedom from it.

In addition it can be argued that man, as an animal, would be impotent to act if he did not filter out extraneous internal and external information. From this perspective, the authentic encounter with Being Heidegger refers to, may be little more than superfluous noise normally filtered out of life. Whilst attempting to add this noise back into life may result in the type of jarring that may create a sense of meaning, it could be argued to be a wholly inauthentic encounter with Being. The amount of effort needed to sustain this jarring appears analogous to that of fighting natural adaptation; for example, attempting to concentrate on an odour, or noise, having already grown accustomed to it.

While many believe an authentic interaction with Being is man's path out of modernity, others, like Strauss, consider it is rather modernity in its most extreme form:

> 'Strauss's critique of existentialism is that rather than escaping from modernity, it forms modernity's third and most radical "wave". Strauss argues that Nietzsche and Heidegger have misdiagnosed the character of contemporary nihilism. For Strauss, nihilism resides not in the loss of an originary or authentic encounter with Being or the abyss, but in the loss of contact with nature in our moral and political lives – the discovery for moderns that no particular way of life has inherent worth. The pursuit of authenticity, far from being a road to release from modernity, is a symptom of modernity bereft of all

connection with nature. The release from modernity, for Strauss, will involve a release from the hermeneutic or self-interpreting self, from *dasein*, as the most extreme, and therefore truest, form of modernity. Instead of the self-interpreting exister, Strauss points to the human being engaged in and structured by civic life, standards, laws. He sees that the crisis of modernity is not centrally at the level of meaning or significance for the individual exister, but about our capacity to engage in a moral and political life that connects citizens to a structure of human excellence. The "originary" encounter is, for Strauss, not for the human as *dasein*, but for the human as citizen, as a certain "type" structured by a shared moral and political life. To recover this form of the "originary", one turns not to the poetic musings of pre-Socratic poets and philosophers, but to the dialectical

> rationalism of the dialogues of Plato.' (Robertson 1999 pp.2-3)

As mentioned, some believe the solution to the posthuman issue is the return to a more literal interpretation of Christian scripture. By placing God in between man and nature it effectively undermines the re-ordering of man as utility because it re-establishes man as *necessarily* ontologically superior to nature. The Christian literalist perspective of modern technology is that man has been given nature by God as utility and man has developed modern technology to best utilise nature. This said, while it is wholly appropriate to order nature as utility, man has been imbued, by God, with intrinsic worth sufficient that the ordering of man as utility is strictly prohibited. The protection offered by this more literal interpretation of

Christian scripture is reflected and demonstrated in the stance taken by the predominately Christian fundamentalist, Pro-life lobby in the US. Here, human life is been deemed sacred and thus should be protected from termination, even if this is contrary to social utility.

From the Christian fundamentalist standpoint, the explanation behind why man is now applying modern technology to himself is because of secularism and man's rejection of foundationalism. Rather than modern technology ordering man, boundary-less man is blindly applying modern technology to himself in a vain and desperate attempt to find/create meaning. For Christians the method by which this process can be halted also appears obvious i.e., the re-establishment of meaning and boundaries via adherence to scriptural literalism.

Unfortunately, Nietzsche established the obvious counterargument to the Christian fundamentalists position i.e., that God has already been demonstrated as unsustainable in the face of scientific endeavour. However it may be argued that the undermining of Christianity was the result of mismanagement and a clash of personalities, rather than inherent unsustainability. That is, the upper-echelons of the Roman Catholic Church may, in the past, have lost sufficient touch with the existential nature of Christianity to become inflexible in the face of overwhelming empirical evidence. As Shea argues:

> 'In fact, Galileo's condemnation was the result of the complex interplay of untoward political circumstances, personal ambitions,

and wounded prides.... Had Galileo been less devout, he could have refused to go to Rome; Venice offered him asylum. Had he been less convinced of the truth of his theory, he could have treated it as mere conjecture and remained at peace with the church. But Galileo could not resign himself to either course. He pressed for a prompt acceptance of his theories, and Urban VIII responded with a stern reaffirmation of the authority of the pope. Science and religion were both to suffer from the clash, and what could have been a fruitful dialogue proved to be a bitter feud.' (1986 pp.132-133)

Religious sustainability is grounded in nebulous and infinitely interpretable scripture that is specifically designed to enable the accommodation and assimilation of any external threats to its authority. As long as this is always tacitly understood by high ranking Church leaders, then Christianity should be redeemable. Indeed recent radical reinterpretations of Christian scripture may already be paving the way for its return. An important example of this is Christianity's assimilation of evolution. Whereas it was once suggested that God created man in his own image and placed him on earth as a unique and ontologically separate entity, it is now suggested that God chose a mammal on a dynamic and evolving earth to imbue with a "soul" (God's image), and thus elevating it, man, to the position of an ontologically superior mammal. Beyond this, Christianity's recent foray into intelligent design *may* prove fruitful in re-establishing Christianity at the forefront of the natural sciences.

Misinterpreting Humanism

Bertrand Russell accuses Kant of, and then derides him for, reversing the anti-foundationalist position he acquired after reading Hume:

> 'The first German to take notice of Hume was Immanuel Kant, who had been content, up to the age of about forty-five, with the dogmatic tradition derived from Leibniz. Then, as he says himself, Hume "awakened him from his dogmatic slumbers". After meditating for twelve years, he produced his great work, the *Critique of Pure Reason*; seven years later, at the age of sixty-four, he produced the *Critique of Practical Reason*, in which he resumed his dogmatic slumbers after nearly twenty years of uncomfortable wakefulness.' (Russell 1950 p.51)

Russell's apparent distain for Kant focuses on the issue of morality; specifically that having developed a non-cognitivism moral standpoint in the *Critique of Pure Reason*, Kant appears to revert back to his old dogmatic cognitivism in his later *Critique of Practical Reason*. However, while it may *appear* that Kant has reverted back to moral cognitivism this may be an illusion.

As noted, Kant argues that although humans do *not* have free will, because they are physical entities that obey physical laws, it is meaningless to talk and treat

humans as if they lack free will because this would fly in the face of their intuitions on the subject. Having made such an argument, it appears coherent for Kant, in the same vein, to reject moral cognitivism because there is no God to create moral knowledge, but at the same time to find non-cognitivism unedifying, for morality appears to be a social necessity. Having concluded this, it then seems appropriate for Kant to attempt to resolve this paradox by proposing a *fictional* grounding for morality based on the distinction between *autonomy* and *heteronomy*.

Apparently building on this interpretation of Kant's work, Fuller argues, in a debate with Latour, that Kant's distinction between autonomy and heteronomy (something both he and Latour believe is the very basis of contemporary humanism) is, and has been acknowledged by many as, *intentionally* existential. A fiction created by Kant and something that forms the grounding of the *existential* project that is humanity:

> 'the "human" or "the social" is demarcated for the *normative* [my emphasis] purpose of creating the project of humanity. Social science's founders were not deluded into thinking that there is a prior "human essence", especially as that phrase is derided today. Rather humanity was a project in the making. It was a political project'. (Fuller 2003 p.84)

Confusion surrounding metanarratives such as humanism can stem from the fact that there appears to be four basic, and overlapping, philosophical standpoints; *foundationalism*: the claim that truth can be known, *scepticism*: the questioning of whether truth can be known, *anti-foundationalism*: the claim that truth cannot be known, and *existentialism* (in a loose sense of the term): the claim that truth cannot be known, but that man should invent knowledge. Together these four standpoints feed back on themselves to form a circularity of perspectives.

However, the apparent passive stability, when in the dominant, of both foundationalism and anti-foundationalism can complicate this situation. While scepticism and existentialism are inherently dynamic, necessitating active and critical participation at some level (they being destructive or creative processes respectively), foundationalism and anti-foundationalism require little or no critical participation. Indeed, the passivity of these positions facilitates their social indoctrination. Many Eastern sects teach the meaninglessness of anti-foundationalism as dogma and live a peaceful, although somewhat passive, existence. The fact that these sects have great longevity, but appear to have little or no scientific endeavour, may cement the belief that science is a moral project i.e., that without elevating man's self interests above that of the other, there is simply little or no motivation to participate in science.

The circularity of perspectives can be illustrated by utilising the nature of challenges to moral authority as they appear in the First World, where humanistic moral foundationalism is both the assumed and dominant position. Foundational

humanists believe that morality is "cognitive" i.e., that there is an inherent grounding to moral knowledge. However some cognitivists will be provoked, for whatever reason, to question the validity of this claim. If placated, these sceptics may return to being cognitivists, but if not they may reject cognitivism all together. Now holding the position of "non-cognitivism" i.e., that there is *no* inherent grounding to moral knowledge, these individuals are left to ponder moral relativism; a position that, for many, is considered contrary to the social best interest. In an attempt to sidestep this, some non-cognitivists will argue that man is better off "inventing" a foundation for moral knowledge than living without it. To this end they will propose, either the existential recreation of the humanistic morality, or the existential creation of some other basis for moral knowledge.

Some "open" existentialists will argue that man is better off accepting the limits of moral knowledge i.e., its fictitious, contingent and local nature should be openly divulged, thus allowing it to be challenged, and possibly even superseded, by more "appropriate" alternatives. However other, more "paternal", existentialists will argue it is in man's best interest to be hidden from the limits of moral knowledge. To this end, they will duplicitously represent their moral existentialism as having *actual* foundational grounding. They may even succeed, for the sake of mankind, in deluding themselves of this foundation. Indeed, as the old aphorism goes, the best way to delude others is by first deluding yourself.

A contemporary example of a paternal existentialist (again in the loose sense of the term) appears to be Leo Strauss. Strauss, having been indoctrinated into

Orthodox Jewry as a young child, soon becomes sceptical of, and then rejects all, religious foundations. Yet having done so he proposes – in a bid to save liberal society from what he perceives as the destructive influence of relativism – that the power elite should covertly strengthen the religious orthodoxy, he, and in most cases they, no longer believe in: 'He [Strauss] believes that there is an irresolvable conflict between the interests of the individual and the interests of society. He thinks that the conflict can only be camouflaged by lies and deceptions, and that the greatest among these is religion.' (Drury 1999 p.12) Indeed, the indoctrinating of existential ideas as foundational is surely the propagational mechanism behind both religion and ideology. This said, perhaps the only difference between the two is ideology's failure to garner greater protection, from challenges to its authority, by hiding its origins in infallible mysticism, rather than fallible man.

Nevertheless, if either open or paternal existentialism is taught, by acolytes, to the young and the credulous, as dogma, it will likely result in the creation of new foundationalists, completely unaware of the fictional underpinning of their beliefs. If this process is allowed to propagate, then eventually the fictional nature of such beliefs might be completely lost, as existentialist teachers die out and are replaced by foundationalist teachers who perpetuate and indoctrinate beliefs they have never known to be fictitious.

If the circularity of perspectives is applied to Kant then it accounts for Russell's comments but without contradiction. Here Kant, as a child, is indoctrinated into the dominant belief system of the time and place i.e., Christianity. However Kant

later reads Hume and is provoked into questioning his faith. Having become dissatisfied with the most compelling contemporary defence of Christianity, that offered by Leibniz, Kant then rejects Christianity's foundationalism. Furthermore, having rejected the Christian God, consistency dictates that Kant must also reject the moral knowledge associated with this God. Nevertheless, having done so, dissatisfaction with non-cognitivism motivates Kant to creation of an existential account for morality, one divorced from, although highly compatible with, Christian scripture and theist cognitivism.

This said whether Kant's distinction between autonomy and heteronomy is an example of open or paternal existentialism appears mute for two reasons. Firstly, if Kant were an open existentialist he would probably feel the need to hide this in philosophical obfuscation, lest he be persecuted as a heretic. Secondly, the ultimate success of humanism *may* function to disguise its very nature i.e., if sufficiently commendable, even open existentialism will, eventually, be taught as foundational.

Nevertheless, the result of this God's eye view of perspectives is to render less prosaic any investigation into the humanist account of man. For the moment it is acknowledged that humanism is not only *de facto* existentialism (the rejection of foundationalism necessitates that its origins are fictitious), but most probably existentialism by design (i.e. *not* created as an attempt to account for "how things really are"), the value and consequences of any emancipation from humanism are thrown into question. Firstly, because it undermines a rush to judgment on

humanism, based on the naïve assumption that having revealed humanism as *not* accounting for how things really are, it should be rejected and replaced by the metanarrative that gives the *true* account for how things really are. Secondly, because humanism is either erroneously or duplicitously taught as dogma, one possible solution to the anomalies it throws up might be, rather than recommending its replacement, simply to acknowledge it as local and contingent. Thirdly, because there is *no* true account of how things really are, it leaves open the possibility that, although far from perfect, humanism is the "best" philosophical system man has to offer himself.

Resurrecting Humanism?

Anti-foundationalism has a long history, within the Western World, of being an ephemeral standpoint. Indeed, current "post-foundationalism" should *not* be associated with the revealing that there are not rules, but rather the re-revealing. Proto man did not start with rules and then lose them; he started without rules, and then chose either to live without rules, as with some Eastern civilisations, or alternatively to create rules for himself.

Clearly, sometimes these rules have been conceived as local and contingent; however the advantageousness of continuity usually dictates that dominant rules are to be taught as dogma, and thus eventually believed as foundational. On other occasions rules have been imposed on, and indoctrinated into, a population as

foundational via oppression and the eradication of alternatives. Nevertheless, once fictitious rules are believed to be foundational they are ripe for undermining by scepticism and an eventual return to anti-foundationalism; a cyclical process that, in the West, has a documented history dating back many millennia.

Nevertheless there have always been some, in the West, who have wished to make a virtue out of anti-foundationalism, and to them the debate surrounding the posthuman will offer as another example of the inherent failings of metanarratives such as humanism. However, whilst the rejection of humanism would resolve the posthuman debate by undermining the motivation behind its creation, it would also undermine man's impetus towards *all* forms of modern technology. Indeed, it appears difficult to understand most of man's distinctive contributions as a species if humanism's active, and often organised, resistance to nature is not taken into account. While Burroughs' famously writes, in a letter to Ginsberg, that: 'Human, Allen, is an adjective, and its use as a noun is in itself regrettable' (1994 p.68), therefore suggesting that it may be more appropriate to perceive man as a becoming rather than a thing. This has, in the West, been a "becoming against" what would otherwise envelope man in an amorphous nature. The pertinent questions here appear to be the extent to which a-humanism would return man to this nature; and if it did, would this be a pyrrhic victory. As Fernández-Armesto argues on the last page of his systematic attack on humanist mythology entitled *So You Think You're Human?*:

> 'That humans are uniquely rational, intellectual, spiritual, self-aware, creative, conscientious, moral, or godlike seems to be a myth – an article of faith to which we cling in defiance of the evidence. But we need myths to make our irresoluble dilemmas bearable. And our claims for our nature are more: not mere myths but also aspirations, still waiting to become true. By the standards of the Utopian hopes Justin Stagl identifies, we are bestial creatures indeed; but those glimpses of self-elevation to a genuinely different category – to the level of angel, or god, or comic-book super-hero – give us precious self-dissatisfaction, which we can build on.' (2005 p.170)

Ironically, having accepted that while metanarratives are not foundational this fact is unimportant, and having dismissed the rejection or replacement of humanism as inherently unpalatable; the retention of humanism and the confinement of the posthuman to the humanist metanarrative, appears to return the account full-circle. However this is illusory. As argued, the US posthuman debate of the late twentieth century has all the hallmarks of a phantom, emotive and ephemeral apocalypse narrative, rather than a serious critique of future technologies. The fact that posthuman technologies failed to generate public debate prior to, or even after, such dialogue, adds weight to its phantom nature. Indeed, the lack of vociferous debate appears indicative of a tacit and widespread acceptance of posthuman technologies. That is, First World societies realise the technological development they crave, will ultimately include movement towards the posthuman, and that this is something they do not find unappealing *per se*.

Nevertheless the process towards the posthuman is, and will increasingly become, a matter of public policy, and social research will play an important role in examining who is dictating such policy i.e., whether it serves some highfalutin humanistic existential project, or the vested interests of politicians, scientists and their financiers. To this end Actor-Network Theory's a-humanist methodology, grounded within the framework of humanism, appears to have a role to play in examining the power relationships within the networks of posthuman technoscientific innovation. Whilst, as has already been mentioned, ANT's role is highly unlikely to be associated with the creation of policy, its commentaries will be useful in the refinement and regulation of policy. As Law argues:

> 'If science is powerful it is because it has created a network of locations where there is some agreement about warrantable connections: where the same types of docile bodies, text and machines are all available to localise what had been delocalised. And this network of agreement is, at least in part, embodied in machines.' (Law 1986 p.34)

For it is within the realm of the posthuman, that machines, and other non-human actants such as genes and nanotechnology, will, more than ever, be imbued with power, both literally and narratively.

CONCLUSION

Posthuman technologies are portrayed, by both sides of the US posthuman debate, as being eminent, having epochal potent, and being a credible threat to the very existence of the human species. Indeed these technologies have been positioned within a contextual framework analogous to that of nuclear and biological weaponry. However, having placed the posthuman debate in a historical context and offered up its dialogue to other avant-garde socio-political narratives that deal with species-altering technologies, there appears to be an incongruity between the subjects' portrayal and the realpolitik of such technologies.

Clearly, the whimsical and speculative notion of improving man via self-intervention is an age old phenomenon. However, the idea that man's fate may hang in the balance, if he were to refrain, or fail to refrain, from utilising self-altering technoscience appears to have its origins in the mid ninetieth century. The notion that man may *need* to intervene in his own evolution appears to have been a response to the increasing popularity of Darwinism, and the worry that having ostensively broken from natural selection, man may need to replace the process with artificial selection.

Nevertheless, even if it is conceded that the rapid increases in investment, resources, and the speed of technological advancement, has served to undermine temporal projections for a number of posthuman technologies; from a historical

perspective these technologies appear to be many years behind "initial" expectations. This technological time lag was due to the Nazi eugenics of the Second World War, which effectively halted, temporarily of course, man's appetite for self-alteration. Nevertheless, having pushed beyond what is now considered an unfortunate historical incident, these technologies are again on the menu. However this change in perspective is *not* a recent event. The technology used to perfect the first successful human conceived via in vitro fertilization (Louise Brown, born on the 25th of July 1978) was a *de facto*, and very public, statement of intent regarding posthuman technology. Indeed, as Chen argues, it was nearly a decade earlier, in 1969, when Edwards and Steptoe first: 'reported that they had fertilised a human egg in a Petri dish. Commentators conjured *Brave New World* scenarios. One British newspaper reporter warning, "The test tube time-bomb is ticking away." The research, he wrote, brought scientists closer to someday cloning "a cohort of super-astronauts or dustmen, soldiers or senators."' (2004 pp.1-2)

Indeed, having investigated the emergence, in the US, of a pre-millennial posthuman debate, the phenomenon appears *not* to be a novel manifestation but rather the recycling of a much earlier socio-technological debate, with the addition of an end-of-days demagogic rhetoric. The popularity of this appears to be directly related to the temporal, and spatial, susceptibility of certain elements of the US public to such rhetoric. While its apparent "emergent" nature can be accounted for by the rebranding of its narrative, and because the previous social debate has, after a century, become one of general indifference.

The reasons why the posthuman debate materialised in the US during the late 1990's appears to have more to do with the psyche of certain elements of the US populous, than the sparking of new debate caused by the revealing of previously undisclosed revolutionary technology. Indeed, the reason why this debate appears to be fading out of the public interest may reflect the ephemeral nature of end-of-days narratives i.e., eventually their focus becomes redirected elsewhere.

This lack of originality and contemporary input becomes increasingly evident when the posthuman narrative is offered up to the science fiction allegory. Here the posthuman debate appears wholly unable to acknowledge, let alone offer meaningful commentaries on or solutions to, the frequently unpalatable and contradictory scenarios proffered by contemporary science fiction.

The reason for this quietism appears to centre on the posthuman debate's metanarrative bias i.e., the continuity between the conceptions of the human offered by humanism and Christianity. Here, man is seen as self-evidently both the pinnacle of creation and possessing an inherently improvable disposition. As a result, the posthuman debate revolves solely around the main issue of contention between these viewpoints i.e., whether man is himself improvable.

Ironically it is the homogeneity between humanism and Christianity that enables the posthuman debate to exist, for the dialogue is analogous to a first-order conflict regarding the rules within a single metanarrative, rather than a second-

order conflict *between* two competing metanarratives. Indeed, there is considerable cross-over, with Christians utilising secularised concepts of the "good life" to argue against the posthuman, whilst humanists argue the posthuman is merely a function of the ingenuity God gave to man.

Consequently, the posthuman dialogue appears wholly dismissive of contemporary science fiction representations that question whether man is the pinnacle of creation, or challenge his belief regarding the improvability of his disposition. Indeed, the extent to which these science fiction scenarios jar with the self-limited sphere of the US posthuman narrative is overwhelming to the point that their lack of representation, within the debate, appears to be a fundamental oversight.

However, while the posthuman narrative appears so fundamentally different when glimpsed through the lens of a-humanism that it is difficult not to assume such repositioning *must* have value, this is unfortunately an illusion. For examining the posthuman debate from outside of humanism only serves to undermine the narrative's coherence. Clearly the "posthuman" is an empty concept without the "human", but the rejection of humanism also undermines the posthuman *telos*; for without humanism man lacks the impetus to participate in *any* technoscience, including the posthuman.

Indeed the strategy of applying a-humanism to the posthuman debate appears analogous to applying non-cognitivism to a debate on applied ethics i.e., it

undermines the whole process. For debating whether actions are "right" or "wrong" is rendered incoherent the moment the possibility of moral knowledge is rejected. Similarly, debating the value of the posthuman, or posthuman policy, is rendered incoherent the moment humanism is rejected. This is because first-order calculations are *necessarily* predicated on second-order assumptions.

Nevertheless, like non-cognitivism's role in ethics, a-humanism has a roll to play *within* the posthuman narrative. Firstly, by exposing power issues that would otherwise remain hidden by humanist assumptions. Secondly, by reminding man of his limitations, undermining his blasé hubris, and offering up scenarios that give him pause for thought and thus impede his rush to judgment.

This said applying a-humanist argument to the posthuman narrative may also serve as an effective method of directing participants out of both the posthuman debate and its grounding humanist metanarrative.

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Star Trek: The Next Generation. "Q Who?" Season 2, Episode 16. 8th May 1989. Written by Maurice Hurley, Gene Roddenberry (creator). Directed by Rob Bowman. Performances by Patrick Stewart, Jonathan Frakes, LeVar Burton, John de Lancie and Whoopi Goldberg. Produced by Gene Roddenberry. Paramount Television, 1989. DVD. Paramount Home Video, 2002.

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The Boys from Brazil. Written by Heywood Gould. Ira Levin (novel). Directed by Franklin Schaffner. Performances by Gregory Peck, Laurence Olivier, James Mason, Steve Guttenberg and Denholm Elliott. Produced by Martin Richards and Stanley O'Toole. Twentieth Century Fox, 1978. DVD. ITV DVD, 2003.

The Fly. Written by David Cronenberg, George Langelaan (story). Directed by David Cronenberg. Performances by Jeff Goldblum, Geena Davis, John Getz, Joy Boushel and Leslie Carlson. Produced by Stuart Cornfield. Twentieth Century Fox, 1986. DVD. Twentieth Century Fox Home Entertainment, 2000.

The Fog of War: Eleven Lessons from the Life of Robert S. McNamara. Directed by Errol Morris. Performances by Robert McNamara, Fidel Castro (archive footage), John Kennedy (archive footage), Nikita Khrushchev (archive footage) and Curtis LeMay (archive footage). Produced by Errol Morris, Michael Williams and Julie Ahlberg. Sony Pictures, 2003. DVD. Sony Pictures Home Entertainment, 2004.

The God Who Wasn't There. Written by Brian Flemming. Directed by Brian Flemming. Performances by Brian Flemming, Sam Harris, Richard Carrier, Alan Dundes and Robert Price. Produced by Brian Flemming and Amanda Jackson. Beyond Belief Media. 2005. DVD. Beyond Belief Media, 2005.

The Matrix. Written by Andy Wachowski and Larry Wachowski. Directed by Andy Wachowski and Larry Wachowski. Performances by Keanu Reeves, Laurence Fishburne, Carrie-Anne Moss, Hugo Weaving and Joe Pantoliano. Produced by Joel Sliver, Andy Wachowski and Larry Wachowski. Warner Brothers, 1999. DVD. Warner Home Video, 1999.

The Power of Nightmares: The Rise of the Politics of Fear. "The Shadows in the Cave". Episode 3. 3rd November 2004. Written by Adam Curtis. Directed by Adam Curtis. Performances by Adam Curtis, Gilles Kepel, Richard Perle, David Johnston and Bill Durodie. Produced by Adam Curtis. British Broadcasting Corporation, 2004.

The Terminator. Written by James Cameron and Gale Anne. Harlan Ellison (suggested stories – originally uncredited). Directed by James Cameron. Performances by Arnold Schwarzenegger, Michael Biehn, Linda Hamilton, Paul Winfield and Lance Henriksen. Produced by John Daly, Derek Gibson and Gale Anne Hurd. Orion Pictures Corporation, 1984. DVD. MGM Home Entertainment, 2001.

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